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IDENTIFIERS	Hands On Experience; NOTIS Online Software; SilverPlatter ERIC

ABSTRACT

This document is the final report to the U.S. Department of Education of a research and development grant awarded to establish a fully equipped electronic training room and test the effectiveness of hands-on instruction in learning the NOTIS OPAC (online public access catalog) and the Silver-Platter ERIC database on CD-ROM. The purpose of the study was: (1) to identify common errors and problems experienced by students using computer-based research tools; (2) to develop hands-on training modules for specific computer systems; (3) to create a computer-equipped training facility that can serve as a model for other institutions; and (4) to implement the training modules on an experimental basis, evaluate their effectiveness, and further refine them. The study was divided into a NOTIS study and an ERIC study. The NOTIS study found no measurable difference in learning between the hands-on group and the lecture/demonstration group. The ERIC group found that hands-on instruction was slightly more effective than a lecture/demonstration alternative and that student interest is enhanced when taught in an hands-on environment. (Contains 44 references.) (JLB)

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ED 369 391

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HANDS-ON INSTRUCTION IN AN ELECTRONIC CLASSROOM

A final report to the U.S. Dept of Education of a Research and Development Grant awarded to establish a fully-equipped electronic training room and test the effectiveness of hands-on instruction in learning the NOTIS OPAC and Silver-Platter ERIC.

BY

BRIGHAM YOUNG UNIVERSITY
HAROLD B. LEE LIBRARY

PREPARED BY
Marvin E. Wiggins

1994

Project Director:
Marvin E. Wiggins

Physical Facilities Team:
John O. Christensen, team leader, Randy J. Olsen, Kal A. Larsen, and Kayla Willey.

NOTIS Study Team:
John O. Christensen, team leader, H. Julene Butler and Mark England.

ERIC Study Team:
Afton M. Miner, team leader, Larry D. Benson, and Marvin E. Wiggins

Consultants:
Paul F. Merrill and Richard R. Sudweeks

Editor:
Dale S. Swensen

JR016623

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Susan Fales
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ABSTRACT

A final report to the U.S. Dept. of Education of a Research and Development Grant awarded to establish a fully-equipped electronic training room and test the effectiveness of hands-on instruction in learning the NOTIS OPAC and Silver-Platter ERIC. The purpose of the study was a) to identify common errors and problems experienced by students in using computer-based research tools, b) to develop hands-on training modules for specific computer systems that can be used as prototypes for other instructional programs, c) to create a computer-equipped training facility that can serve as a model for other institutions, and d) to implement the training modules on an experimental basis, evaluate their effectiveness, and further refine them. The study was divided into a NOTIS study and an ERIC study. The NOTIS study found no measurable difference in learning between the hands-on group and the lecture/demonstration group. It was concluded from this experience that it was not practical to expect to teach students to be competent users of the NOTIS OPAC in a one-hour session. The reason was not due to the inability of the students to grasp the mechanics of the search commands but to their inability to grasp the organization of the information they were accessing--which made their use of the available software tools far less effective. The ERIC study found the following: a) Hands-on instruction was slightly more effective than a lecture/demonstration alternative, b) Student interest is enhanced when taught in a hands-on environment, c) Combining sets of concepts was the most critical component for using ERIC effectively, d) Some who had prior experience with searching ERIC NOTIS MDAS software were confused by instruction on using ERIC on Silver-Platter.

EXECUTIVE SUMMARY

The following is the final report to the U.S. Dept. of Education of a Research and Development Grant awarded to establish a fully-equipped electronic training room and test the effectiveness of hands-on instruction in learning the NOTIS OPAC and Silver-Platter ERIC.

There were three study teams. The first team established the physical facility for an electronic training room. A NOTIS team studied Byline on NOTIS software and an ERIC team studied ERIC on Silver-Platter software. There were two consultants.

The purpose of the study was a) to identify common errors and problems experienced by students in using computer-based research tools, b) to develop hands-on training modules for specific computer systems that can be used as prototypes for other instructional programs, c) to create a computer-equipped training facility that can serve as a model for other institutions, and d) to implement the training modules on an experimental basis, evaluate their effectiveness, and further refine them. The study was divided into a NOTIS study and an ERIC study.

The NOTIS study found no measurable difference in learning between the hands-on group and the lecture/demonstration group. It was discovered that most of the problems the students were having dealt with organizing and conceptualizing their information need. The training room facilitated their ability to learn the mechanics of the NOTIS OPAC, but they still lacked the knowledge of how information was structured and how information sources were intellectually accessed by users. The structure and organization of information and user strategies to access information, concepts which are generally well understood by librarians, were new concepts to the students and were not easily grasped. It was concluded from this experience that it was not practical to expect to teach students to be competent users of the NOTIS OPAC in a one-hour session. The reason was not due to the inability of the students to grasp the mechanics of the search commands but to their inability to grasp the organization of the information they were accessing--which made their use of the available software tools far less effective.

The ERIC study found the following: a) Instability and revisions in software and hardware greatly slowed the study, b) Equipment hardware and software dependability influences training and learning effectiveness, c) Selecting the correct data base for a specific topic is critical, d) One hour is insufficient to teach more than the basics of ERIC, e) Hands-on instruction was slightly more effective than a lecture/demonstration alternative, f) Effective hands-on training requires more than one proctor to give sufficient attention in classes of 15 or more students, g) Student interest is enhanced when taught in a hands-on environment, h) When two students share a terminal during instruction, they will prompt each other in a positive way on the best way to do a search, i) Combining sets of concepts was the most critical component for using ERIC effectively, j) Prior experience with ERIC was more helpful in the control group, k) Prior experience with ERIC had no influence with the experimental group, and l) Some who had prior experience with searching ERIC NOTIS MDAS software were confused by instruction on using ERIC on Silver-Platter.

Form Approved
OMB No. 1850-0639
Expiration Date 11/30/93

FINAL PERFORMANCE REPORT

for

College Library Technology and Cooperation Grants Program
Higher Education Act, Title II-D

(CFDA No. 84.197)

UNITED STATES DEPARTMENT OF EDUCATION

OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT

INSTRUCTIONS FOR PREPARING FINAL PERFORMANCE REPORT

LIBRARY PROGRAMS

WASHINGTON, D.C. 20208-5571

College Library Technology and Cooperation Grants Program
P.L. 99-498
(HEA Title II-D - CFDA No. 84.197)
Number UT 890109-010
Final Performance Report
February 1994

Part I - General

1. Name and address of institution or organization receiving grant. For joint projects, provide complete list of all participating institutions or organizations.

1224 Harold B. Lee Library, Brigham Young University, Provo, Utah 84602

2. Name, title and telephone number of person preparing this report.

Marvin E. Wiggins (801) 378-6346

3. Grant number (R197-D90057), project and budget periods.

Jan 9, 1989 - September 30, 1992
Sep 30, 1992 - September 30. 1993 - one year no cost time extension

4. Grant amount awarded and actual amount expended. (List separately the amount of federal dollars expended and the amount of matching dollars expended.)

Awarded	$85,677.00	
Expended	$63,126.19	Government funds
Matching funds	$76,967.06	BYU funds (1/3 matching contribution required)

(See Appendix A - "Budget")

Part II

A. - Narrative Report

1. A comparison of actual accomplishments to goals established for the project. Explain any major changes or revisions in the project with respect to approved activities, staffing, budgeting, including any unspent funds. Explain why established goals were not met, if applicable.

The overall objectives of the project were:

a. To identify common errors and problems experienced by students in using computer-based research tools.

b. To develop hands-on training modules for specific computer systems that can be used as prototypes for other instructional programs.

c. To create a computer-equipped training facility that can serve as a model for other institutions.

d. To implement the training modules on an experimental basis, evaluate their effectiveness, and further refine them.

e. To report the results of the project nationally and make the training materials available to other institutions.

No major changes or revisions were made in the project. The established goals were or are going to be met (future goals include the reporting the results to the library community through article(s) in the professional literature).

The grant team consisted of the project director and three study teams: one team to set up the physical facility and separate teams to design and conduct training programs for NOTIS and ERIC.

The NOTIS and ERIC teams had the task of studying whether the use of hands-on exercises in a fully-equipped training room would produce significantly better results in improving patrons' ability to use computer-based research tools than do traditional methods of library instruction. Throughout the project these two teams identified common errors and problems experienced by students in using the NOTIS on line public access system and an ERIC CD-ROM index.

The grant team created a computer-equipped facility for training students in the BYU library which could be used as a model for other institutions. In addition, they developed

training modules for the NOTIS OPAC and the ERIC CD-ROM database, which they tested, evaluated and refined in actual hands-on sessions.

There were minor staff changes. Original teams included Marvin Wiggins, project director and three study teams. The first team established the physical facility for an electronic training room and consisted of John Christensen, team leader, Kal Larsen, Randy Olsen and Kayla Willey. A NOTIS team consisted of Kayla Willey, team leader, John Christensen, and Mark England. Kayla was replaced by H. Julene Butler and John Christensen became the team leader. the ERIC team consisted of Afton Miner, team leader, Larry Benson, and Paul Merrill. Marvin Wiggins replaced Paul Merrill on the ERIC team and Paul Merrill and Richard Sudweeks became consultants.

2. A comparison between proposed expenditures and actual expenditures by budget categories (i.e.: equipment, salaries and wages, supplies, travel, etc.). If services were contracted out, include a copy of the contract and a report from the contractor.

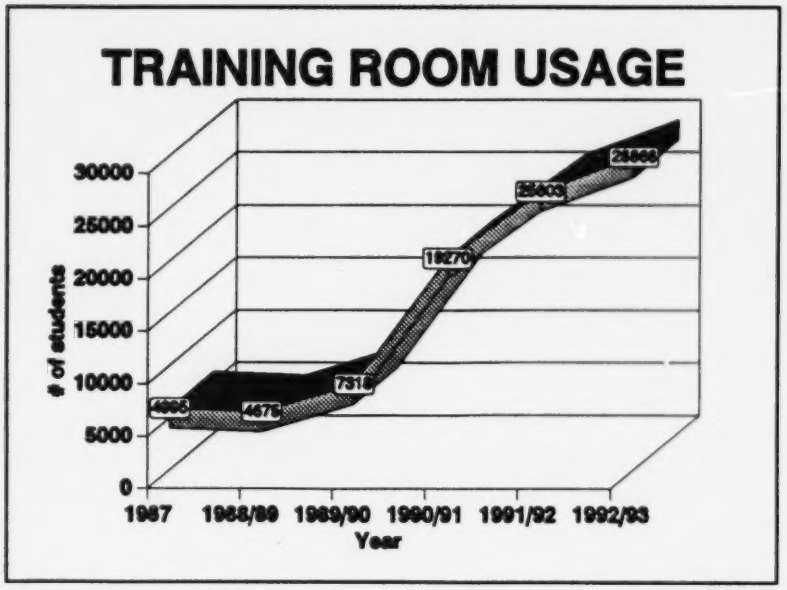
CATEGORY EXPENDITURE	BUDGET	GRANT EXPENDITURE	APPLICANT MATCHING FUNDS
Student Wages	$9,600.00	$1,109.00	$9,000.66
Fringe Benefits			2,376.33
Capital Equip	71,949.00	61,180.29	56,664.56
Supplies & Other	4,128.00	836.90	8,925.51
Total	85,677.00	63,126.19	76,967.06
Less Expenditure	62,641.19		
Unspent Balance	23,035.81		

(See Appendix A for detail)

3. A description of the impact of the Federal project on the populations served, including the numbers and types of persons benefiting from the grant, evidence of improvement in provision of library and information services, the impact on the academic programs of the institutions, and any special needs that were met.

The new training room has enabled librarians to reach far more individuals with hands-on bibliographic instruction than was ever possible before. During the academic year 1990-91, when the training room was first put into full-time use for library instruction, the number of students participating rose 163%. It has continued to increase in subsequent years, as shown in the table on the next page.

Nearly all instruction since 1990-91 has taken place in the training room.



- The existence of the training room, the hands-on training capabilities of the computers, the NOTIS OPAC, and, more recently, other resources such as the INTERNET have encouraged students and faculty to get more personal training and encouraged faculty to require more library training and more library assignments of their students. Training classes which have been offered for 20 years are now much better attended.

- The existence of the LAN has benefitted the whole library by providing access to electronic research tools from multiple work stations. CD-ROM databases and indexes that were previously available only on stand-alone PC's can now be accessed on personal computers throughout the library. This increased student access and enhanced the need for training in the new facility.

- Most importantly, we have gained valuable new insights into the nature of bibliographic instruction on-line which we have used to enhance our teaching. We have learned that mechanical techniques for using CD-ROM databases and library OPACs are relatively easy to master, but the concepts underlying the use of such databases in intellectual problem solving are much harder to grasp and cannot adequately be taught in a one-hour course.

- An extra benefit is the ability to bring in outside trainers to train the library staff. Two very effective workshops were recently held in the new training room for library staff. One trained over half of the full time library staff in the use of the Internet. The other (a three day workshop) trained about a dozen on-line searchers from the

Library, the Chemistry Department, and the University of Utah Chemistry Department in searching *Chemical Abstracts* on-line. Almost all of the workshops and training sessions held in the training room emphasize live demonstration and hands-on training.

With this new view of bibliographic instruction many of the librarians who teach classes have altered their methods in an effort to teach computer searching concepts to students more effectively in the limited time available. A new 3-credit-hour course in the honors curriculum called "Information Literacy" has been created to teach these concepts. The enrollments are usually small but those who take the course have expressed their satisfaction with its usefulness.

4. The actual number and percentage increase in resource sharing activity, including a description of the method by which the resource sharing was increased (i.e.: telefacsimile transmission, access to bibliographic information via CD-ROM, etc.) If a bibliographic utility, regional or other network was joined or participation enhanced, name the network and describe the service gained.

The development of the LAN network made access to many CD-ROM databases possible from stations located near each of the reference desks in the library. Numbers were not recorded for these as this was an added benefit which was not part of the project, but the LAN terminals (a total of 10 throughout the library) were and continue to be very heavily used by the patrons of the library to get to a variety of CD-ROM databases.

The training room has added an enhanced environment for training to the library. The library holds a series of regularly scheduled training sessions for students throughout the year to teach the use of the CD-ROM indexes and the library OPAC. When not in use for student sessions, the training room is used for training staff and faculty on systems such as STN, Dialog, the INTERNET, etc. Vendors have also used the facility to demonstrate their products. During most of the year the training facility is heavily scheduled.

The rest of this question is not applicable to this grant.

5. If any assessment of evaluation of the project was conducted, provide a copy of the findings.

None conducted.

6. A description of any plans to build upon or continue the project.

The librarians who have participated in the grant project have gained a great amount of knowledge and experience from the project which has resulted in modifications to improve the way we teach our bibliographic instruction lectures to patrons of the library. Due to the tremendous response to the training room facility we now have a second room for bibliographic instruction training. At this point the second room is only equipped with a big screen monitor due to lack of funds but we realize the necessity of hands-on and demonstration instruction. We are in the planning process for a new library building, with tentative construction to start within about four years, and a new state-of-the-art bibliographic instruction training room is a major element of the new library wing. We are using our experience from the present training room to help us design the best possible facility for the new library wing. Our experiences from this grant has also helped us in the development of tools (i.e.: handouts, on line help screens, systems development of our LANs, etc) for training our patrons in the use of the automated systems in the library outside the training room environment. We expect the demands on the training room and the need for more and improved bibliographic instruction to continue to increase rapidly.

B. Additional information requested for Research and Demonstration projects particularly, provide the following additional information:

1. A description of activities undertaken or to be undertaken to disseminate project results.

This grant report is the initial activity undertaken to disseminate research results of the project. We also plan to submit an article for publication in a major journal in the library literature to report the project results.

An earlier article, "Developing Support Facilities for BYU's Bibliographic Instruction Program" (Wiggins, Marvin E. and Donald H. Howard, *The Journal of Academic Librarianship*, v. 19, no. 3, July, 1993, pp. 144-148), included photographs and a description of the training room (Appendix B - "Published article"). Other articles which relate to the project are also being planned.

In addition to the articles, presentations have been made at national workshops on bibliographic instruction. Julene Butler did a poster session demonstrating the training room

at the 1992 LOEX conference. Mark England conducted a bibliographic instruction session at the 1993 National Convention of the American Society for Engineering Education, which focused on computer assisted research for engineers and included information on the use of the training room and our conclusions. Proposals are being prepared for further presentations at forthcoming workshops.

We are, of course, willing to consult with those interested who find out about our project through the grant report, journal articles or presentations.

Several groups of librarians and educators have come to the university to see the bibliographic instruction training room and have been given a demonstration of its uses by library personnel. Some groups came specifically to see the training room; others came on different business and were introduced to the facility during the course of their visit. These groups included librarians from Stanford, The University of California at Santa Barbara, all of the colleges and universities in Utah, a university in Oregon, engineering librarians from the University of Nebraska, and two separate groups from the People's Republic of China and Mongolia.

2. The result of the project's evaluation, including the impact on the patron group addressed.

During the first months of the project (Fall 1989 to Summer 1990) while the training room was being furnished and the technical details of making the room function as a hands-on teaching facility were being completed, a literature search was made (see Appendix C) and questionnaires on the OPAC (Appendix D1) and ERIC (Appendix E1) were administered to student groups.

As we compiled lists of frequently made errors on the OPAC and ERIC from these questionnaires, we made some interesting observations. We found that very few of the library patrons used the more advanced features of the systems; most would enter only one or two words using either the subject or keyword approaches to ERIC and NOTIS. Almost all the errors we found were either simple typing errors or misused commands (e.g., some had used key words with the t (title) and s (subject) commands ; see OPAC Appendix D2 and ERIC Appendix E2.) It seemed pointless to redesign our training in an effort to help users correct simple keying errors.

As we moved to the development of the training modules and instruction phase we decided that the training on ERIC and the NOTIS OPAC were so fundamentally different that we split into two teams.

NOTIS STUDY:

Two articles, "Model statement of objectives for academic bibliographic instruction: Draft revision," prepared by the ACRL/BIS Task Force of Model Statement of Objectives, Lori Arp, chair (College & Research Libraries News (May 1987): 256-61, and "Library Users and On line Systems: Suggested Objectives for Library Instruction," by Dennis Hamilton (RQ (Winter 1985): 195-7) were used to form the basis of the learning objectives for the NOTIS OPAC hands-on training (see OPAC Appendix D3).

Julene Butler followed these objectives to develop a training program she used in Library Science 111 courses during Winter Semester 1992. During each block half of semester, Julene used the program to train students in two separate sections of the course. Each time she used the lecture and demonstration method to teach the first class and the hands-on method to teach the second. Julene had only one hour to teach each of the classes. The team decided that to teach all the concepts of searching on the NOTIS OPAC would be impossible in one hour, so Julene gave a basic introduction to setting up a search problem and then concentrated on instruction on the keyword aspect of searching the NOTIS OPAC (see OPAC Appendix D4). The classes were given the same assignment, which was afterwards evaluated by the NOTIS OPAC team (see OPAC Appendix D5). The first two classes were used to refine the instruction and the second two classes further verified the results. Approximately 54 students participated.

The results were somewhat surprising. No measurable difference in learning was discovered between the hands-on group and the lecture/demonstration group. There were, of course, individual differences. Several in the hands-on group performed better than any of those in the lecture/demonstration group. However, some individuals in the hands-on group also performed worse than any of those in the lecture/demonstration group. These results caused the NOTIS OPAC team much concern. It appeared that our study had proved that the hands-on method of teaching we were trying to use was futile. We considered the possibility that the previous knowledge of the students in the use of the NOTIS OPAC may have polluted the study but when we checked their previous knowledge it appeared relatively equal across both groups.

As we analyzed the answers to the library assignment further (see OPAC Appendix D6), we discovered that most of the problems the students were having dealt with organizing and conceptualizing their information need. The training room facilitated their ability to learn the mechanics of the NOTIS OPAC, but they still lacked the knowledge of how information was structured and how information sources were intellectually accessed by users. These concepts had been part of the library work experience of the three team members for many years.

During fall semester of 1992, this conclusion was further verified when Mark England, one of the team members, taught an honors class in library research. He found that it took him far longer than he had planned to teach on-line searching because of this same difficulty. The structure and organization of information and user strategies to access information, concepts which are generally well understood by librarians, were new concepts to the students and were not easily grasped.

We concluded from this experience that it was not practical to expect to teach students to be competent users of the NOTIS OPAC in a one-hour session. The reason was not due to the inability of the students to grasp the mechanics of the search commands but to their inability to grasp the organization of the information they were accessing--which made their use of the available software tools far less effective.

ERIC STUDY:

During this same period, the ERIC team administered pretests to students to determine the kinds of mistakes they were making in searching ERIC. Printouts were made of the actual searches students entered and were reviewed by three librarians who both individually and collectively identified and tallied the errors (ERIC Appendix E2). Training objectives were formulated to help students avoid the types of errors discovered in the pretest (ERIC Appendix E3).

Instruction was developed and revised several times (ERIC Appendix E4). Additional revision was required due to frequent changes in the Silver-Platter software. Posttests were then developed to determine if students could do a successful search following the training.

Our consultants from the Department of Instructional Science recommended we follow a performance testing procedure. Professional librarians would study the printouts of student searches and judge the success of the search much as a team

of judges would rate the performance of athletes.

Instruction was tested on a group of library student employees who were not familiar with ERIC nor Silver-Platter. We expected that if library employees could not learn the concepts, we needed to revise the instruction. After employees received instruction and completed their own search, they gave us oral feedback on how to improve the instruction.

At first instruction was to be designed for a normal fifty-minute class period in order to be used at our university. However, preliminary instructional trials found that it was unrealistic to teach all the concepts students needed to correct their errors in a normal class period.

A no-cost extension of the study was requested and granted because of technical software and hardware problems with the LAN and revisions of the instructional package to accommodate changes by Silver-Platter.

Instruction was scaled back to very basic concepts to perform a reasonable search including use of thesaurus descriptors, creating and combining sets of concepts (boolean searching) showing and marking records, and printing. Four classes were selected for testing, including two introductory library science classes designed for freshmen and two honors classes. The students were surveyed to determine how familiar each one was using ERIC. One class from each category was used as an experimental group and the other as a control group.

The experimental group received hands-on instruction and the control group received demonstration instruction followed by a second example where students verbally responded to cues as to what came next. All groups were given an assignment to search a topic (see ERIC Appendices E5, E6, and E7). The individual searches were printed out and three librarians analyzed the results (ERIC Appendix E8).

Conclusions and Observations from the ERIC study include:

- Instability and revisions in software and hardware greatly slowed the study.
- Equipment hardware and software dependability influences training and learning effectiveness.
- Selecting the correct data base for a specific topic is critical.
- One hour is insufficient to teach more than the basics of ERIC.
- Hands-on instruction was slightly more effective than a

lecture/demonstration alternative.

- Effective hands-on training requires more than one proctor to give sufficient attention in classes of 15 or more students.
- Student interest is enhanced when taught in a hands-on environment
- When two students share a terminal during instruction, they will prompt each other in a positive way on the best way to do a search.
- Combining sets of concepts was the most critical component for using ERIC effectively.
- Prior experience with ERIC was more helpful in the control group. It had no influence with the experimental group.
- Some who had prior experience with searching ERIC NOTIS MDAS software were confused by instruction on using ERIC on Silver-Platter.

3. A description of the innovative use of and the types of technology employed in the project.

The training room was designed with a computer for an instructor and sixteen others for students. The instructor could, through a software program and the LAN, project his or her computer work onto the screens of each student computer and/or onto a large projection screen at the front of the room. The instructor could then release the student computers after the demonstration was finished to let the students work individually on their own questions on the various systems available through the LAN including the NOTIS OPAC and the ERIC database.

4. A description of the grantee's plans to build upon or implement the project on a larger scale.

Another room in the library has now been equipped with a large screen projector for demonstrations. Presently the library has no more room to expand; however, as previously mentioned, the library is anticipating the construction of a new library facility in close proximity to the present library building. When this new facility is constructed a new training facility in a larger room with more computer terminals will be constructed. As the construction nears more definite plans for this facility will be developed.

Part III - Financial Status Report (SF 269A)

A. Provide information on federal funds expended and the matching funds expended as instructed on the SF 269A

B. Provide an itemized accounting of the one-third matching contribution on a separate sheet of paper and attach to the SF 269A.

The formal reporting of this information was supplied by the university financial office under a separate cover. A copy of that report is attached.

(See also Appendix A for more detail)

FINANCIAL STATUS REPORT

(Short Form)

(Follow instructions on the back)

1. Federal Agency and Organizational Element to Which Report is Submitted	2. Federal Grant or Other Identifying Number Assigned By Federal Agency	OMB Approval No.	Page	of
U.S. DEPT OF EDUCATION	R 197090057	0348-0039		pages

3. Recipient Organization (Name and complete address, including ZIP code)

BRIGHAM YOUNG UNIVERSITY, FINANCIAL SERVICES/RESEARCH, P.O. BOX 21128, PROVO, UT 84602-1128

4. Employer Identification Number	5. Recipient Account Number or Identifying Number	6. Final Report	7. Basis
87-0217280	5-20881-4210	☒ Yes ☐ No	☒ Cash ☐ Accrual

8. Funding/Grant Period (See instructions) From: (Month, Day, Year)	To: (Month, Day, Year)	9. Period Covered by this Report From: (Month, Day, Year)	To: (Month, Day, Year)
10-1-89	9-30-93	10-01-92	09-30-93

10. Transactions:	I Previously Reported	II This Period	III Cumulative
a. Total outlays	53,839.71	9,286.40	63,126.19
b. Recipient share of outlays		76,967.06	76,967.06
c. Federal share of outlays	53,839.71	9,286.40	63,126.19
d. Total unliquidated obligations			0.00
e. Recipient share of unliquidated obligations			0.00
f. Federal share of unliquidated obligations			0.00
g. Total Federal share (*Sum of lines c and f*)			63,126.19
h. Total Federal funds authorized for this funding period			85,677.00
i. Unobligated balance of Federal funds (*Line h minus line g*)			22,550.89

11. Indirect Expense	a. Type of Rate (*Place "X" in appropriate box*) ☐ Provisional ☐ Predetermined ☒ Final ☐ Fixed			
	b. Rate	c. Base	d. Total Amount	e. Federal Share
	43%	1,423.00	611.89	611.89

12. *Remarks: Attach any explanations deemed necessary or information required by Federal sponsoring agency in compliance with governing legislation.*

13. Certification: **I certify to the best of my knowledge and belief that this report is correct and complete and that all outlays and unliquidated obligations are for the purposes set forth in the award documents.**

Typed or Printed Name and Title	Telephone (Area code, number and extension)
Kevin L. Walker, University Accountant	801 378-7548 (ROXAN)
Signature of Authorized Certifying Official: Kevin L. Walker	Date Report Submitted

NSN 7540-01-218-4387 269-201 Standard Form 269A (REV 4-88)
Prescribed by OMB Circulars A-102 and A-110

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APPLICANT MATCHING FUNDS

CATEGORY	EXPENDITURE
Student Wages	$9,000.66
Fringe Benefits	2,376.33
Capital Equip	56,664.56
Supplies & Other	8,925.51
Total	76,967.06

(See also Appendix A for more detail)

APPENDIX A

BUDGET DETAIL

02/09/94 1
22:32:01
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BRIGHAM YOUNG UNIVERSITY-ACCOUNTING REPORT

MONTHLY FINANCIAL REPORT

PAGE 1
SUMMARY
WI19

COLLEGE/DIVISION: 140 LIBRARY
DEPARTMENT: 14001 LIBRARY
RESPONSIBLE PERSON: WIGGINS MARVIN E
ADDRESS & PHONE: 6346 1224 HBLL

START DATE 10/01/89
END DATE 09/30/93

FOR THE MONTH OF: JANUARY 1994
ACCOUNT CODE: 5-20881
DESCRIPTION: DPT OF ED/4197090057
BUDGET YEAR EXPIRED: 100 PCT

SUB CODE	DESCRIPTION	BUDGETS BASE	BUDGETS REVISED	ACTUAL CURRENT MONTH	ACTUAL PROJECT YEAR	OPEN COMMITMENTS	BALANCE AVAILABLE	% USED
2600	STUDENT WAGES	9,600	9,600.00	0.00	1,109.00	0.00	8,491.00	11
3000	CAPITAL EQUIPMENT	71,949	71,949.00	573.95	60,939.51	0.00	11,009.49	84
3010	CAPITAL EQP-RESEARCH	0	0.00	0.00	240.78	0.00	240.78-	0
	CAPITAL EQUIPMENT	71,949 *	71,949.00 *	573.95 *	61,180.29 *	0.00 *	10,788.71 *	85
4100	SUPPLIES-GENERAL	0	0.00	0.00	473.50	0.00	473.50-	0
4900	POSTAGE & MAIL	0	0.00	0.00	4.25	0.00	4.25-	0
5500	OPERATING EQUIPMENT	0	0.00	88.95-	279.95-	0.00	279.95	0
5800	EQUIP REPAIR/MAINT	0	0.00	0.00	27.21	0.00	27.21-	0
6890	INDIRCT COST RECOVER	4,128	4,128.00	0.00	611.89	0.00	3,516.11	14
	SUPPLIES & OTHER	4,128 *	4,128.00 *	88.95-*	836.90 *	0.00 *	3,291.10 *	20
	TOTAL EXPENSES	85,677 *	85,677.00 *	485.00 *	63,126.19 *	0.00 *	22,550.81 *	73
	ACCOUNT TOTAL	85,677 **	85,677.00 **	485.00 **	63,126.19 **	0.00 **	22,550.81 **	73

PLEASE CALL EXTENSION 4702 IF YOU HAVE ANY QUESTIONS.

APPLICANT MATCHING FUNDS (1/3 required)

$9000.66
2376.33 *

56664.56

8925.51

$76967.06

* = fringe benefits

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APPENDIX B

PUBLICATIONS BY REPORT DATE

THE JOURNAL OF ACADEMIC LIBRARIANSHIP

IN THIS ISSUE:

[illegible]

[illegible]

[illegible]

[illegible] Academic Librarians
[illegible]

[illegible] Library Employees

[illegible] Faculty Status: Research and Assumptions
[illegible]

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Developing Support Facilities for BYU's Bibliographic Instruction Program

by Marvin E. Wiggins and Donald H. Howard

To be effective in today's computerized environment, bibliographic instruction programs must include appropriately modern facilities. Instruction rooms that incorporate patron-use computers and related electronic equipment allow librarians to demonstrate and students to practice using various new information technologies. This article examines how librarians at one university developed a proposal for, helped design, and obtained funding for a new BI facility.

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Bibliographic instruction librarians often lament that they lack sufficient staff, space, and modern instructional equipment to provide effective library instruction. Given sufficient support, most BI librarians believe they could offer programs capable of instructing all academic departments in library skills, research strategies, and information resources. To effectively teach the academic community about sophisticated information tools, however, librarians need computer labs with terminals for hands-on instruction and related electronic instructional equipment.

It is sometimes necessary to develop a successful BI program to demonstrate the need for enhanced facilities—although often patience, gradual growth, and faculty involvement are key factors in garnering needed support. Once that support is gained—and staff classrooms, equipment, and computer facilities are added—programs become stronger and larger, leading to the possibility of greater campus support. Thus, the inter-relationship of program support, facilities, and growth continues.

The initial form of BI is traditional reference service given by librarians assigned to reference desks. To become more effective, librarians work with university faculty to develop lectures, handouts, and exercises. These programs can evolve into formal offerings in the curriculum and lead to instruction that reaches every student of the university. As this happens, most public service librarians become involved in some aspect of instruction and the library should have use of appropriately designed instruction rooms containing AV and computer equipment, and possibly local area networks (LANs).

Today, BI must include instruction in automated library services. Thousands of students now use CD-ROM and other computerized indexes, and automation is reaching into every aspect of the bibliographic progress. Librarians can either give one-on-one instruction on such indexes in the reference area, or they can organize ways to address larger numbers of students. One-on-one instruction creates a heavy demand on reference personnel. A more efficient approach is to teach these search techniques to whole classes within academic disciplines.

A classroom in the library that is equipped with computer workstations allows librarians to combine all aspects of BI and to incorporate computer indexes, databases, and search techniques appropriate to the needs of each specific discipline.

BI librarians talk increasingly about the need to give hands-on instruction in a lab environment.[1] A computer science department would never try to teach computer science without a computer lab; yet libraries plan BI programs to teach automated services in libraries without similar instruction facilities. How can BI librarians and campus administrators work together to provide space, equipment, and staff to meet such objectives? To find answers, it may be helpful to examine a successful BI program.

Developing a Plan

To develop a successful BI program, librarians must recognize the short- and long-term needs of the university and develop a workable plan to meet those needs—showing how bibliographic instruction can support academic offerings in the institution and what personnel and facilities will be needed to implement the plan. Thus, a BI program plan should be based on the unique goals of

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Figure 1
The Evolution of BI Programs and Supporting Facilities at Brigham Young University

Date	Library Activity	Academic Activity	Supporting Facilities
Freshman English Instruction			
1940-1969	Show and tell. Library exercises. Reference assistance.	Send students to library.	Reference area.
1970—	Cassette-taped tours of building.	Send students to library.	Library. Walk through entire library.
1972—	Programmed tests on card catalog/periodical indexes.	Send students to library. Grade students on library tests.	Reserve library. Students use card catalog and indexes. Tests taken in the library building.
1981-1987	Teach research strategies for writing background papers.	English instructor lectures on writing background studies and papers. Financial support to library.	Academic classroom and walk-through lectures in reference areas of library building.
1988—	Teach research strategies for writing background papers.	English instructor lectures on writing background studies and papers. Financial support to library.	Library classroom with video illustrating research strategies.
Junior English Instruction			
1975—	Teach research strategies for each academic major.	Students prepare papers within major using subject resources.	Small group study rooms and walk-through tours of subject reference areas. Provide subject bibliographies.
Academic Department Instruction			
1970—	Librarian subject specialists work with academic faculty to provide library instruction.	Some lectures in academic classrooms. Most instructors bring students to library.	Gradual growth. Change from early walk-through tours to lectures in group study rooms to use of the current BI training room equipped for hands-on instruction of automated services.

the institution's curriculum and an assessment of the instructional needs of the student body. The plan should include a carefully worded statement describing the current BI program and its significance to institutional goals, the number of students involved, and the contribution that can be made by expansion.

Two excellent publications can help librarians prepare the plan: *The LIRT Library Instruction Handbook*, a practical step-by-step guide,[2] and the ACRL "Model Statement of Objectives for Academic Bibliographic Instruction."[3] Answering the following questions will also help formulate the plan:

- What audiences should bibliographic instruction be designed to reach?
- What skills do freshmen need to learn? How about sophomores? Juniors? Seniors? Graduate students? Faculty? Library employees?
- How will library instruction be tied to the learning needs of specific academic programs? (Faculty at Earlham College have enriched the curriculum through assignments using the bibliographic process.)[4]
- What is the proper environment for providing instruction? For example, how much should be taught in the academic classroom and how much in the library building?
- What special arrangements should be made for instruction in computerized library resources?
- What kinds of information should be presented—e.g., library orientation, search skills, research strategies—and when?
- What instructional methods or mediums are best for each instructional component—e.g., lecture, AV, student assignments, practical applications—and in what combinations?
- What personnel will be needed?
- What physical facilities will be needed?
- How much support exists for bibliographic instruction among library administrators, librarians, and academic faculty? How is this support manifested?

It may be helpful or even necessary to break the plan into phases. BI librarians frequently have vision beyond what can be immediately supported. Being willing to work over many years to achieve a goal may not only win support from library and university administrators, it may actually result in an escalation of the timetable. This has been the experience at Brigham Young University. The best support has come from a few professors who invested much time in developing good programs. As those programs established themselves those professors became strong allies of the library back in their academic depart-

ments. Some of those allies have since become Department Chairs, Deans, and university Vice-Presidents. That kind of support helps open doors when proposals are made to expand instructional programs to the entire university curriculum. Figure 1 illustrates the evolution of BI programs at BYU and the growth of facilities to support those programs.

The BYU Experience

Toward the end of the 1970s, Brigham Young University became committed to offering BI to all 27,000 students at appropriate times in their academic careers. The plan was to teach search skills and basic research strategy to students in freshman English, and specialized research skills to juniors and seniors in all academic departments. The following chronicles the development of BYU's BI program.

Beginning in 1980, the English Composition program and the library developed a BI team-teaching approach designed to reach 5,500 lower division students a year. The sessions began in the academic classroom and were followed by demonstration lectures within the open library area.[5] (The English Department contributed $12,000 a year from its funds to support testing costs and library student instructors.)

For juniors and seniors in advanced English composition, a different approach was taken. Students came to the library and met with an appropriate subject librarian for instruction in the basic research procedures of their academic discipline. Librarians talked with students in small-group study rooms and gave them tours of the reference and index areas, discussing various library tools such as automated catalogs and CD-ROM indexes.

The success of BYU's BI program led to the involvement of more librarians, more students, more faculty. BI classes grew—by 1988 over 10,000 students were receiving instruction on library resources and research methodology each year. Most of this instruction occurred within the library reference areas. The BYU Faculty Advisory Council recommended that instruction be expanded to reach *all* students in *all* academic departments. It was clear that this sort of expansion would require the use of facilities other than the library's reference areas. Library patrons were disturbed by instructional tours and research strategy lectures given in open areas, and many of the students being taught could not hear the BI librarian. Instruction of larger numbers of students would have to take place elsewhere.

Students receive instruction on a CD-ROM product. LAN-School software permits the instructor to transmit instruction to every computer station or permit students to work independently in a hands-on environment.

The only library rooms available for instruction were group study rooms that held 20 to 35 students. These rooms were too small and were not equipped with terminals and CD-ROM products. A new training facility was needed in which the use of electronic tools and computerized research strategies could be taught. In addition, librarians would have to redesign the BI curriculum for classes taking place in the library building. Though such lectures could be given in academic buildings, locating them in the library would permit instruction on a mix of print, AV, and computer tools in a research strategy framework.

In the past, BYU librarians taught research strategies using a video/workshop format. A video of students following a research strategy contained several segments where the video was stopped and in a workshop format, the librarian would illustrate the strategy, with examples and print sources. Automated catalogs and indexes on CD-ROM were taught with hands-on procedures. The designing of a new training facility equipped with screens, online terminals, and CD-ROM stations would make it possible to demonstrate automated research tools and allow hands-on practice for students in one room, isolated from the rest of the library. Such training sessions could maximize librarian time by expanding the size of their audiences from one student to large classes of students, and supplement university demands for large-group viewing of various items from the library's video and film collections.

A Proposal

The BYU Library Bibliographic Instruction Committee wrote a proposal for new facilities based on the strength of the existing BI program and the potential instructional benefits of an enhanced program.

The proposal called for the construction of a 75-seat training room equipped with computers, CD-ROM players, and a large-screen data and video projection unit, all linked through a local area network. If such a facility were proposed for a new library building, it would be wise to have it constructed close to the entrance of the building to prevent the movement of large groups of students through study areas. Because this was not possible in the existing building, the Committee proposed that the room be constructed within a wing of the library that housed nonprint facilities. Because most students in this area used headsets within their carrels, they would not tend to be distracted by incoming groups of students. In addition, audio and video support were already available (as were personnel for maintenance of the equipment) and the room could also serve as a facility for expanding nonprint services.

A video scanner allows the instructor to project images from print to a large screen.

Student receives instruction in use of software for World Atlas on large screen while practicing on his own terminal.

At the time of the proposal, BYU's BI personnel included a BI Coordinator, 20 librarians who also worked in collection development and reference services, a LAN Administrator, and two student proctors. In addition to the instructional room, the proposal called for the construction of office facilities for the BI Coordinator, LAN Administrator, and student proctors.

It was anticipated that librarians would offer instruction in this facility several times during students' college years. The focus of the program would be on library literacy and the concomitant skills of independent research. Instruction in research strategies would be integrated with training in the use of locally mounted resources such as BYU's OPAC, CD-ROM indexes, RLIN, OCLC, and full-text databases, and in the use of remote databases and OPACs through the Internet.

Funding

The proposal and the request for funds went to the university administration in three phases. The library's 22-year track record in BI encouraged administrative support of the plan. Phase 1, building the instructional room, was funded quickly; construction was completed within three months, with no need to go through normal budgeting procedures. A large rear-projection screen was purchased to support video instruction and demonstration of the online catalog and CD-ROM indexes.

Librarians felt that students needed structured hands-on exercises to learn library automated services. For Phase 2 of our proposal, funding for an instructor unit, 20 student terminals, a CD-ROM tower, and a LAN to connect all components was requested from the U.S. Department of Education as part of a research and demonstration grant. The resulting $85,166 grant covered the necessary equipment for the training room.

The third phase of our proposal to the university administration was fully funded five months after the grant for Phase 2 was received. These Phase 3 funds permitted the purchase of an additional CD-ROM tower, to add up to 20 CD-ROM products and permit library patrons to access all CD-ROM products at multiple stations throughout the library through the Local Area Network.

Use of Facilities

As soon as the new BI facilities were made available, demand for instruction increased and created the need for additional facilities. In the first semester, the room was filled to 80 percent of capacity. A 50-seat room in close proximity was put to use for classes requiring the video equipment but not the computer equipment; this expansion made necessary the purchase of a second large-screen projection unit.

As computerized tools and resources became a larger component of reference services, it became more crucial to instruct both full- and part-time library staff in their use. The training facility was also used to meet this need. Training staff on new equipment had the effect of promoting greater use of electronic information resources, which further contributed to the demand for BI.

Today, the facility is being used for instructional activities that reach 320 classes a semester and 12,000 students a year. Passageways and workstations are configured to allow full handicap access. One-on-one assistance and adaptive equipment are also available for handicapped students. BYU's enhanced BI program requires the ongoing evaluation of instructional objectives, performance, and management processes—not only to justify newly acquired facilities, but to determine what programs should receive support in the future.

Future Plans

As BI offerings expand and facilities are provided to support them, the facilities themselves open new opportunities for enhanced programs. Brigham Young University is planning a major library addition that will open many new and exciting possibilities. Rather than retrofit existing library facilities to support a university-wide BI program, we can now design a library facility that not only serves the present program but more closely meets the long-range plan.

The library has proposed a design for an instructional facility capable of providing both lecture and hands-on opportunities in an environment utilizing the latest instructional technology. Preliminary plans call for the construction of four Technology-Enhanced Learning Environment (TELE) rooms. In a TELE room, activity conducted on a computer with linkages to the university OPAC, LANs, stand-alone CD-ROM equipment, and the Internet could be projected onto a large screen at the front of the room using either rear- or front-projected video. The instructor could switch from images on the computer monitor to images projected from an overhead projector, a VCR, or a video camera focused on print material. All

Student receives instruction on Silver-Platter software on large screen while practicing on his own terminal.

Proctors assist students in use of Silver-Platter software.

equipment, including room lighting, would be controlled from the central teaching console.

One TELE room, which would accommodate 200 in a fixed-seating configuration, would be used for demonstration only. Three additional TELE rooms, each of which would accommodate 15 workstations and 45 movable chairs, would be used for hands-on instruction. An additional 40-seat lecture room, with a large-screen video unit but no computer workstations, would be used for small-group instruction where computer demonstration was not required. Office space in the complex would include a reception area and three offices to house the Library Use Instruction Coordinator, computer maintenance personnel, and teaching assistants.

Future instructional media (programs on video disk and hypercard combining sound and illustration with text) may soon become part of our library collections. An example is LC's "The American Memory" project—an interactive video database on optical and compact discs that highlights some of LC's unique collections of manuscripts, books, movies, pictures, and recordings from 1898 to 1920. The first phase of this project became available to libraries in 1992.[7] The library's instructional facility will be designed to teach such systems, as well as campus data-switch software, patron online searching, bibliographic file maintenance, and other tools used to access and organize information.

The interrelationship between library facilities and successful BI programs is a positive one. Good planning and long-term commitment are key ingredients in making the necessary proposals and securing the necessary funds to make BI a relevant, ever-evolving part of the curriculum.

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APPENDIX C

LITERATURE SEARCH - BIBLIOGRAPHY

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APPENDIX D

OPAC APPENDICES D-1 TO D-6

D-1 STUDENT QUESTIONNAIRE
D-2 STUDENT ERRORS
D-3 LEARNING OBJECTIVES
D-4 INSTRUCTION OUTLINE
D-5 STUDENT HANDOUTS
D-6 FINAL RATING SHEET

APPENDIX D-1

NOTIS - STUDENT QUESTIONNAIRE

BYLINE SURVEY

1. Please describe what information you were attempting to find in BYLINE.

_____

_____

_____

_____

_____

_____

_____

2. If you were searching for a subject, did you use the Library of Congress Subject Heading List?

_____ Yes _____ No

3. Did you find what you wanted in BYLINE? _____ Yes _____ No

Please explain how successful your search was and why?

_____

_____

_____

_____

_____

_____

4. Do you feel that you need additional training on how to use BYLINE?

_____ Yes _____ No

5. Would you attend a BYLINE training session if the library offered one?

_____ Yes _____ No

6. (Optional) If you would be willing to answer a few other questions on your use of BYLINE, please list your first name and telephone number below.

_____ First Name

_____ Telephone Number

BYLINE/ERIC
SURVEY LOG

Terminal Number	Date	Beginning Time	Your Name

Search Number	Time Search Begun	Time Search Completed
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		

SURVEY ADMINISTRATION
INSTRUCTIONS FOR STUDENT ASSISTANTS

BYLINE

Surveys will be given to individuals after they have completed a BYLINE Search. Care should be taken not to make the individual or other library patrons nearby aware that a study is being conducted. Be sure and wear your student badge throughout each session.

1. Locate the correct terminal by checking your schedule. (It is extremely important that each survey period begin on time at the correct terminal)

2. Give a survey to the first person to finish a search after the survey period begins. (If a person is already seated at the terminal at the beginning of the period give them a survey as soon as they complete their search)

3. Explain the following to the individual to be surveyed.

   > The Library is conducting a study of BYLINE use to determine if additional training should be offered to patrons. Would you please fill out a short questionnaire to assist with the study. It should require no more than a few minutes of your time. If the individual responds "yes" give them a survey and ask them to please sit away from the terminal. If the individual says "no" thank them for their time and wish them a good day.

4. After the individual returns the survey, note the time their search was completed next to the search number on the log sheet and on the top of the survey form. EVEN IF A PATRON DECLINES TO FILL OUT A SURVEY, A BLANK SURVEY FORM SHOULD BE ATTACHED TO THE LOG.

5. Continue to collect surveys from all who perform searches during the period. If an individual begins, but does not complete their search during the period, then do not survey them.

6. Staple the surveys and the log sheet together and turn them in to John Christensen. If he is not in his office (2226 HBLL), leave them in his box in room 2228 HBLL or shove them under his door.

7. If a patron who is about to use the terminal observes that a study is being conducted and asks about it, explain the following.

   > The library is conducting a survey of BYLINE use to determine if additional training is needed. At the end of your search we have a short survey we would like you to fill out if you would be willing to participate.

APPENDIX D-2

NOTIS - STUDENT ERRORS

Notis Key Stroke Errors

331	Subject Searches
130	Title Searches
80	Author Searches
101	Keyword Searches
276	Revised Searches
14	Boolean Operators
20	Help Screen used
1	Truncation used
1	Field Coder Operators used
422	User Corrected Own Errors
261	Used Print Screen
190	Index Redisplay
411	Guide Redisplay
119	Entry Errors - unacceptable field label or truncation
376	Typographical Errors
23	Spelling Errors
13	Used First Name Before Last Name
15	Used An Initial Article (A, The, etc.)
23	Based Upon the Data, the wrong type of search was conducted (T instead of S)
163	Did Not Use LCSH
149	Total Number of Surveys Matched with Peeper

BYLINE Frequently Made Errors (or Inefficiencies)

Author, Title, or Subject Searching

1. Did not use Library of Congress Subject heading
2. Used initial article in title search
3. Failed to list surname first in an author search
4. Failed to use hyphens in a subdivided subject heading
5. Misspelled term
6. Used & instead of and
7. Failed to try alternate forms for initials, acronyms, abbreviations, numbers, hyphyenation, punctuation
8. Failed to try variant spellings for terms
9. Search term too lengthy
10. Alphabetic "l" used instead of a numeric "1"

Keyword Searching

11. Keyword search attempted on unauthorized terminal
12. Stopword was used in search argument
13. Omission of the truncation symbol if a term was shortened
14. Early truncation (e.g. k mi$ will only pull first 100 mi words)
15. Incorrect placement or punctuation of field codes (e.g. k twain.au)
16. Misplaced parentheses
17. Used wrong truncation symbol
18. Used inappropriate Boolean or positional operator
19. Didn't realize that once an operator is typed in an argument that same operation is defaulted unless a new operator is typed between words. (e.g. k lincoln or kennedy assassination IS lincoln or kennedy or assassination NOT lincoln or kennedy and assassination)
20. Did not use Revise command to allow for a lengthy search
21. Did not use Revise command to limit search (typed it all in over again)

APPENDIX D-3

NOTIS - LEARNING OBJECTIVES

Learning Objectives for BYLINE Instruction

General Objective

Upon completion of the instructional activity, a user should have an understanding of the function and scope of the BYLINE online catalog system and be self-sufficient in using the various access terminals to perform routine monograph and serial searches.

Program Objectives

P1 The user understands what the BYLINE system is and does and its relationship to the card catalog and other bibliographic sources.

P2 The user understands selected concepts of an online information retrieval system.

P3 The user can operate the BYLINE equipment such as public access terminals, printers, and other access equipment.

P4 The user can structure a BYLINE search by correctly choosing, entering, and manipulating appropriate search commands.

P5 The user can correctly interpret the results of a search and can identify the information pertinent to the purpose of the search.

Learning Objectives for BYLINE instruction

General Objective: Upon completion of a BYLINE instructional activity, a user should have an understanding of the function and scope of the online system and be self-sufficient in using appropriate access terminals to perform monograph and serial searches.

P=Program Objective E=Enabling Objective

P1 The user can describe what the BYLINE system is and does and its relationship to the card catalog and other bibliographic sources.

A. The user understands the function and purpose of BYLINE.

E1 The user can define the phrase "online computer catalog" and understands that the commands from the terminal keyboard interact directly with the computer's memory and logic.

E2 The user understands that the terminal screen and keyboard are used to transmit a catalog search question on the terminal screen to the computer.

E3 The user can recognize and define basic computer terms such as command, database, online, terminal, and search term.

B. The user can define the types of materials included and excluded in the BYLINE database and the dates of coverage.

E1 Given a search problem, the user can decide whether to look in the card catalog, the online catalog, or an index to locate the item cited.

E2 The user can identify the different types of information available in BYLINE--bibliographic (author, title, publisher, date of publication), call numbers, status (circulation, in process), library location symbols, and cross-references.

P2 The user understands selected concepts of an online information retrieval system.

E1 a. The user can distinguish between subject searching and other forms of searching.

b. Given a subject search, the user can select terms from LCSH.

c. Given a search other than subject, the user can select terms and appropriate format for searching by ISSN, ID number, keyword, etc.

d. Given a list of terms, the user can select those terms suitable for keyword searching in the online catalog from those not suitable and employ the boolean logic to manipulate them.

E2 The user understands the purpose of truncation and the way it is implemented in BYLINE and can apply it at appropriate times and in the appropriate form.

E3 The user is aware of the online help screens and can call them up as needed.

E4 The user recognizes the library staff as a source of information about the online catalog and seeks help when needed.

P3 The user can operate the BYLINE equipment such as public access terminals, printers, and other access equipment.

E1 The user understands and can use the alpha-numeric, transmitting, and special function keys (enter key, reset key, clear key, etc.) on the keyboard correctly.

E2 The user can identify and is not intimidated by the commonly held misconceptions regarding the use of computers and computer terminals--the fear of damaging the system by incorrectly operating the equipment and expecting system correction of inputting errors.

E3 The user can accomplish the appropriate sign-on procedures (if any) required by the terminal being used and can begin a search regardless of what might be showing on the display screen.

E4 The user can correct problems or mistakes and knows what to do when the system freezes.

P4 The user can structure a BYLINE search by correctly choosing, entering, and manipulating appropriate search vocabulary.

A. The user can state the existence of the different methods of searching the online catalog.

E1 Given an author, title, or subject search, the user can choose the appropriate command to obtain the desired information.

E2 The user can combine a search command with an argument.

E3 Given an information need requiring subject searching, the user can select the appropriate term(s) from Library of Congress Subject Headings and correctly format the search.

E4 The user avoids common inputting errors and is aware that inputting errors can cause a search to fail.

E5 The user can locate a desired bibliographic record, given partial or complete information about the needed item.

E6 Given a choice between initiating an author, title, or subject search, the user can select the most system-efficient search category to obtain the information needed.

E7 The user can employ special searching features available for the system in the search process such as truncation, keyword searching and boolean logic.

B. The user is able to utilize system features to manipulate retrieved data and fully exploit system capabilities.

E1 The user can recognize and identify the different display screens used by the system.

E2 The user can explain the function of the key data elements provided in each display screen to complete or continue a search.

P5 The user can correctly interpret the search results and can extract the needed information.

E1 Given a bibliographic record display, the user can identify author, title, place of publication, publisher, publication date and call number from the record.

E2 Given a complete citation, the user can locate additional useful information in the record, such as author birth and death dates and collation.

E3 The user can interpret any online error messages and make the needed correction(s) to proceed.

E4 Given a library location code from a display screen, the user can identify correctly the area of the library in which the material may be found.

MODEL STATEMENT OF LEARNING OBJECTIVES
BY Mark England

Introduction

To use any OPAC database, users must know system mechanics: the OPAC commands and how to operate the terminal and possibly communications software. These mechanics of system operation can be taught quickly and are usually readily learned by most individuals new to using the system. To use any OPAC database effectively and efficiently, users must also:

- be able to clearly state their information need.
- know which computer data files exist related to their information need and understand what each represents.
- be able to identify what is included in the online catalog; understand the relationships between the online catalog and the other information resources, both printed and computerized, in the library; and be able to choose the most appropriate information system to help them satisfy their information need.
- be able to analyze their information need and search objectives, and develop a search strategy appropriate for their need and for the system.
- be able to compile appropriate search terms.
- be able to separate search terms into facets or concept groups and develop search input which combines concept groups using boolean and positional operators and/or other features of the system.
- be able to format and print or download output.
- know when and how to narrow or broaden a search strategy.
- be able to select a search strategy that will be effective and will use the computer system efficiently.
- be able to interpret and find the information cited in the search results.

These latter concepts are not typically taught to most users. They are more difficult concepts to learn and take more time to teach. We have found that an understanding of these concepts is lacking in most users. We have also found that these concepts are not taught to groups of users in one or two hours.

Terminology

From this research, we have concluded that most users, after one hour of instruction, are fairly capable (i.e. 6-7 on a scale from 1 to 10) in selecting their search terms. Some users made obvious omissions: they did not include terms that would have greatly enhanced the success of their searches.

An important finding was that many users neglected to search on terms they had already identified as defining their information need. Most did not search all the words they selected, and many did not search different combinations of the selected search terms. Users tended to search in single combinations. Very few users were capable of constructing longer or nested search strategies after one hour of instruction.

We feel that most users underestimated the importance of selecting and then searching appropriate search terms. They seemed too easily satisfied with mediocre results. They failed to search on all combinations, and were not persistent in their search efforts. This may be because of a lack of effort or a misunderstanding of strategy.

Search Mechanics

Users seemed to learn the most simple aspects of keyword searching very quickly. They had little trouble distinguishing between subject searching and keyword searching. They recognized that they need to use the "k=" command to do a keyword search, and they had little trouble grasping boolean logic concepts ("and" and "or" operators).

However, many users had trouble nesting terms. Rarely were field codes used appropriately. Proximity searching was used inappropriately by many users.

Strategy

Lack of knowledge regarding the likely results of their search -- what information resources may be out there -- and lack of experience with the logic and strategies of information retrieval were obvious trouble areas.

After a one hour class session, many users had difficulty with search cause and effect relationships. They did not structure or complete their searches logically. They did a poor job of analyzing their search results, and failed to interactively work with the system to narrow or broaden searches.

Users accepted their early results and stopped searching even though their results were inappropriately narrow or broad. They often didn't refine their searches to find the best sources. Few completed comprehensive searches. Many did not obtain a satisfactory number of hits.

Feedback

Our one-hour instruction module lacked practice time and instructor feedback. Little feedback could be provided during the hands-on module because of time constraints. Very little feedback was provided in lecture/demonstration module. No feedback from instructors was possible during practice and testing after the session.

Feedback -- guided and illustrative practice time -- is crucial for learning, and the only feedback users received was from the system and the results obtained from their search. More guidance from an experienced searcher would have taught users more efficiently and effectively how to successfully perform keyword searches.

Hands on experience and practice is inevitable, if users continue to do keyword searches. However, guided feedback is more difficult to provide users. Yet it is critical for efficient learning and it should be integrated into any learning module. It should be understood, however, that user practice, with opportunity for lots of instructive feedback takes a great deal of class time.

Motivation

The motivation to learn is essential to learning. Users in the hands-on experimental group were motivated to learn. Hands-on instruction was much

more interesting to the users, they were more motivated and less distracted during the instruction sessions, but the hands-on sessions were more rushed.

Most users, in both the experimental group and the control group, seemed to recognize the usefulness of keyword searching. Most commented that they were grateful for being introduced to keyword searching and felt it was more powerful but less focused than subject searching.

Conclusion

We have found that most users are readily taught system commands and the mechanics of terminal operation.

Nearly all users, however, require more instruction, practice time and feedback to learn concepts related to: computer database search strategies; information need analysis; selection of appropriate search terms and organizing them into appropriate search statements in the database; interpreting search results and modifying search input statements.

Furthermore, nearly all users also lack an understanding of the organization of knowledge and the organization of information access systems. Most are familiar with few information access tools and lack an understanding of the relationships between a library's online catalog and the other information resources, both printed and computerized, in the library. Most users are satisfied too easily with incomplete or unrealistic results from bibliographic searches on computer databases, and they often use databases with little or no knowledge regarding the content, intended audience, purpose, or coverage of the database.

To overcome these deficiencies in student preparation and adequately teach and practice these more difficult concepts, users require several hours of instruction to become efficient and effective users of bibliographic computer databases. This instruction should include the instructional objectives published in the following sources:

Hamilton, Dennis. "Library Users and Online Systems: Suggested Objectives for Library Instruction." RQ (Winter 1985), p. 195-97.

"Model Statement of Objectives for Academic Bibliographic Instruction: Draft Revision." College and Research Libraries News (May 1987), p.256-61.

"Online Training Sessions: Suggested Guidelines." RQ (Summer 1981), p. 353-57.

"An Introduction to Online Searching: A Suggested Outline." in The Online Searcher. New York: Neal-Schuman, 1990.

APPENDIX D-4

NOTIS - INSTRUCTION OUTLINE

KEYWORD NOTIS SEARCHING

Words, names, phrases ANYWHERE in BYLINE record.

When effective? (Number of times a term is found using the following commands)

Can't remember 1st word in title
t=huckleberry finn (3)
k=huckleberry finn (46)
t=adventures of huckleberry finn (18)

When author = conference or organization
a=association of computing machinery (0)
k=computing machinery proceedings (69)
a=acm (104)

When subject is not legitimate LCSH heading
s=reaganomics (0)
k=reaganomics (19)
s=united states--economic policy--1981- (10 headings
363 titles)

k=lincoln assassination
one where lincoln=author & assassination of Reagan

TRUNCATION

k=animated cartoons (6)
k=animat$ cartoon$ (25)

STOPWORDS

t=for whom the bell tolls (4)
k=for whom the bell tolls (0)
stopwords=for and the
k=whom bell tolls (6)
k=gone with the wind

(PRACTICE)

ANALYZING TOPIC:

Topic= Are there particular personality traits manifest in teenagers who exhibit anorexic behavior?

s=anorexia nervosa (37 + 15 or so = 52)
k=anorexia (72)
k=anorex$ (73)

Key words= personality traits
teenagers
anorexia

Organize into concepts:

Concept 1	CONCEPT 2	CONCEPT 3
personality traits	teenage	anorexic

Do Search:
k=personality teenagers anorexic (0)
k=personality anorexic (0)

Expand list by writing down plurals, tenses, variant spellings, synonyms, and words related to key concepts:

CONCEPT 1	CONCEPT 2	CONCEPT 3
personality traits	teenage	anorexic
personality	teenage	anorexic
personalties	teenagers	anorectic
attitudes	teen age	eating disorder
characteristics	adolescent	eating disorders
traits	adolescence	
demeanor	high school	
behavior	puberty	
	youth	

Truncate where appropriate.
Try variety of searches as discuss 1. or 2. or 3. nesting:
All three concepts:
k= (anorex$ or eating) (personalit$ or attitude$) (teen$ or adolescen$) (only 1)
Concepts 1 & 3:
k= (personalit$ or attitud$) (anorex$ or eating) (6)
Concepts 2 & 3:
k=anorex$ (teen$ or puberty or adolescen$) (9, only 1 dup)

BOOLEAN OPERATORS:

OR increase # hits; EITHER term may appear (the other, or both)

Use between terms that are synonymous or closely related in meaning

k=teen$ or adolescen$ or youth

AND limits # hits; BOTH (or ALL) terms must be in record

Use between different concepts

BYLINE assumes an and

k=anorex$ and teen$
k=anorex$ and teen$ and personality
k=anorexi$ and personality

NOT Use sparingly

Eliminates records with that term included

k=aids not teaching

(PRACTICE)

POSITIONAL OPERATORS:

ADJ words are adjacent to each other and in order specified

k=special educaiton (long; 1450)
(look at Research based teacher evaluation; 2 words anywhere in record)
k=special adj education (796 entries, all relevent)

WITH words in same part/field of record

k=american civil war (many)
incl one on Civil War in China, 1st amer ed
k=american with civil war (eliminates that one)
s=united states--history--civil war = better

TRY k=american dream (201)
k=american with drean (110)
k=american adj dream (84)
k=american dream literature (23)

LIMITING TO SPECIFIC FIELDS

Like using "with" but can tell system which field to limit to

Subject headings only .su.

k=lincoln.su.

k=lincoln.su. assassination.su.

eliminates record where lincoln=au

Author field only .au.
Title field only .ti.

k=bach.au. and concert$.ti.

(PRACTICE)

limit to particular languages

Format:

k=shakespeare and videorecording (36)
k=shakespeare and video$ (55) incl bks as film/video adaptations
k=williams and compact disc (29) Ralph von Wms
k=williams and 3 adj 4 (56) (sound disc=3/4 in)
k=bach brandenburg (17)
k=bach brandenburg$ (25) other languages

APPENDIX D-5

NOTIS - STUDENT HANDOUTS

KEYWORD SEARCHING

Keyword searching looks for words, names, or phrases found anywhere in the BYLINE record.

Type **k** and press return for a basic help screen on keyword searching.

When is keyword searching effective?

- ** when you can't remember the first word of the title (e.g., Huckleberry Finn begins with "Adventures of")
- ** when the "author" is a conference or a complex organization with several possible names
- ** when the "subject" is not a legitimate LCSH heading, but might appear in the title, notes, or some other field
- ** when you want to do a highly specialized search of BYLINE (e.g., a particular concerto by Bach)

TRUNCATION

Truncation is useful when you need to find items that include variations of a term (e.g., psychology, psychologist, psychological). It is also useful when you are unsure about the correct spelling of a word or when there are alternate forms of an author's name.

The dollar sign is BYLINE's truncation symbol. Attach it directly to the end of the word, WITHOUT PERIODS.

Enter the following searches and compare the results:

k=child psychology	k=animated cartoons
k=child psychologists	k=animat$ cartoon$
k=child psycholog$	

CAUTION: Do not truncate a term too soon. If you truncate a word so that it might easily be the first portion of several longer words, your search will be inefficient. The best approach is to spell out as much of the word as possible.

STOPWORDS

Type **st** then press return for a list of stopwords, or terms that cannot be used when you do a keyword search.

Because these terms appear too frequently in records in BYLINE, they have been omitted from the index so that you can get your results more quickly. If you type a stopword in a keyword search, BYLINE will ignore it entirely.

BOOLEAN OPERATORS

AND

Using "and" limits the number of citations that BYLINE will retrieve, since the book must have BOTH requested terms in its record.

Unless you use another operator between words, BYLINE will assume that you wish to "and" the terms together. Each search statement in the following sets will produce identical results:

k=special education	k=single parent adoption
k=special and education	k=single and parent and adoption

"And" will find terms regardless of their location in the bibliographic record, and with no consideration to neighboring words.

OR

Using "or" increases the number of citations found, since EITHER term may appear in the record.

Use "or" between terms that are synonymous or closely related in meaning. For example,

k=(single or unmarried) and adoption

will retrieve records with either "single" or "unmarried" in addition to the term "adoption".

NOT

"Not" is used to find records in which one (or more) terms are present, but some other term(s) are not present. All records containing the term(s) following the "not" are eliminated from the search.

Use "not" with caution since some relevant records may be eliminated from your search.

Suppose you wanted to find books on AIDS. You could use

k=aids

but you would retrieve many books on classroom teaching aids. To eliminate these unwanted items you could use

k=aids not teaching or

k=aids not teaching learning

["not" is implied between the last two terms]

However, the best strategy for books on AIDS would be to search by SUBJECT, rather than keyword. Using

s=aids disease

results in fewer citations, but they are all relevant.

POSITIONAL OPERATORS

ADJ

"Adj" requires that the words be next to (adjacent to) each other and in the order specified. For example:

k=special education

will find over twice as many citations as

k= special adj education

but many of the books will have nothing to do with special education, since the two words will be pulled from entirely different parts of the record.

On the other hand,

k=single adj parent adj adoption

will find no records (since there is no book with those words in that order in the library). But

k=single parent adoption

WILL find How to Become a Single Parent because "single" and "parent" appear in the title, and "adoption" appears in the subject headings.

WITH

"With" is used to restrict a search to words that appear in the same portion of the bibliographic record, and thus eliminate retrieval of books in which the terms are widely separated.

k=american civil war

will find many records, including several about the Civil War in China, retrieved because it is the "1st American edition" of the book. Using

k=american with civil war

would have eliminated the problem. (But a better search would be by subject: s=united states--history--civil war.)

"With" is also effective when you know that two terms can be used in different patterns, but always close to each other.

k=art adj history

may miss important works that contain the phrase "the history of art". In this situation it would be better to use

k=art with history

For practice, try the following searches and compare the results:

k=sport psychology
k=sport adj psychology
k=sport with psychology

FIELD SEARCHING

Superfields

Using superfields is much like using "with" except that you can instruct BYLINE as to which field(s) you wish to search:

.au. for author
.ti. for title
.su. for subject

The field code immediately follows the search term, with no space between them. Note that a period must both precede and follow the field code. For example,

k=ulysses.ti.
k=augustine.au.

To search two or three fields you may either join the two with a comma, or place TWO periods before the one you wish to EXCLUDE:

k=endicott.ti,au.
k=endicott..su.

Nesting

Nesting (or putting terms inside parentheses) tells BYLINE which portion(s) of your request should be searched first. The system will search the parenthetical segments, then link these results to the other term(s) in the search string.

BYLINE searches operators in the following order:

adj
with
and/not
or

Try these searches and note the different results:

k=apple$ or cherr$ not pie
[books on apples or cherries or both, but not on pies]

k=pie not apple$ or cherr$
["not" eliminated all apples, leaving you with either pie or cherries, or both]

k=pie not (apple$ or cherr$)
[parentheses forced "or" to go first, leaving you with pie but neither apples nor cherries]

OPERATOR DEFAULTS

Once an operator is used, it becomes the default for that search string until another is specified. For example the following will produce identical results:

k=world adj trade center
k=world adj trade adj center

Be careful not to let this backfire on you. Notice that the following will NOT produce the same results:

k=world adj trade center or manhattan adj island
k=world adj trade center or manhattan island

In the second, the "adj" is implied between "trade" and "center" but is replaced by an implied "or" between "manhattan" and "island". So this will find many citations which include the single word "island" anywhere in the record.

****Examples and much of the text of this handout are from a brochure written by Martin Raish at State University of New York at Binghamton.*

Name _____
Section _____

KEYWORD ASSIGNMENT

1. **State your topic** in one or two sentences. Circle or underline the terms (keywords) which are essential in describing your topic.

2. **Organize your search** as follows:
   a. List each concept in a separate column.
   b. List synonymous or related terms within the appropriate column.

Concept 1	Concept 2	Concept 3
(List synonymous or related key terms which deal with Concept 1.)	(List synonymous or related key terms which deal with Concept 2.)	(List synonymous or related key terms which deal with Concept 3.)

Consult the *Library of Congress List of Subject Headings* to assist in the process of determining narrower, broader, or related terms that may be useful in your search.

As you conduct your search:

Truncate terms (**$**) as needed.

Use the **OR** operator to combine synonymous or related terms (those listed within one column).

Use the **AND** operator to combine different concepts (terms listed in separate columns).

Use the **ADJ** operator to link words within a phrase.

3. **Print out screens as you search.** Print out all screens from your keyword searches on BYLINE, including mistakes. The best way to do this is to hit the **Print** key after each time you hit the **Enter** key. You will not lose points for mistakes and it will be very helpful for us to have the information from these printouts to help future students.

4. **Conduct your search** by using the key terms you have listed above. Use truncation ($), Boolean operators (and, or, not), proximity operators (adj, with), and field limit codes (.au. .ti. .su.) as needed for your topic.

   Continue your search until you are satisfied with the results or have determined that BYLINE simply does not contain what you are looking for. **Don't forget to print all screens as you search.**

5. In your own words **contrast the results** of this keyword search with the subject heading search you performed for Assignment #1 in class.

APPENDIX D-6

NOTIS - FINAL RATING SHEET

Code _____

BYLINE KEYWORD RATING SHEET

Truncation used? YES NO

appropriately? # Times

inappropriately? # Times

Boolean Operators used? YES NO

appropriately? # Times

inappropriately? # Times

Nesting used? YES NO

appropriately? # Times

inappropriately? # Times

Proximity Operators used? YES NO

appropriately? # Times

inappropriately? # Times

FIELD LIMIT CODES? YES NO

appropriately? # Times

inappropriately? # Times

Stopwords used? YES NO

Common input errors corrected? YES NO
(e.g. spelling, spacing and punctuation)

# of occurrences:

corrected:

Code _____

Appropriate Narrowing/Broadening? YES NO

Appropriately? # Times

Inappropriately? # Times

Concepts appropriately organized?
(1-5, 1=excellent)

Overall Rating (1-5, 1=Excellent)

APPENDIX E

ERIC APPENDICES E-1 TO E-8

E-1 ERIC - STUDENT PRETEST
E-2 ERIC - STUDENT ERRORS
E-3 ERIC - LEARNING OBJECTIVES
E-4 ERIC - INSTRUCTION OUTLINE
E-5 ERIC - SCRIPT FOR CLASSROOM PRESENTATION
E-6 ERIC - STUDENT HANDOUT
E-7 ERIC - POSTTEST ASSIGNMENT
E-8 ERIC - ANALYSIS OF STUDENT PERFORMANCE

APPENDIX E-1

ERIC - STUDENT PRETEST

Harold B. Lee
LIBRARY
BRIGHAM YOUNG UNIVERSITY

Date: _____ Survey No.____

ERIC QUESTIONNAIRE

1. Please describe what information you were attempting to find in ERIC. Be as specific as possible.

_____

_____

_____

_____

_____

_____

2. How did you prepare for your ERIC search? (Check all that apply)

____ Studied handout on how to search ERIC CD-ROM.

____ Used Thesaurus of ERIC Descriptors to identify subject terms.

____ Other (Please explain) _____

_____

3. Please explain how successful your search was and why? Be as specific as possible.

_____

_____

_____

_____

_____

_____

4. Would you attend a training session to learn the most effective techniques for searching ERIC?

____ Yes ____ No

SURVEY ADMINISTRATION
INSTRUCTIONS FOR STUDENT ASSISTANTS

ERIC

Surveys will be given to individuals after they have completed an ERIC Search. Care should be taken not to make the individual or other library patrons nearby aware that a study is being conducted. Be sure and wear your student badge throughout each session.

1. (Start-up processes to be filled in later)

2. Give a survey to the first person to finish a search after the survey period begins. (If a person is already seated at the terminal at the beginning of the period give them a survey as soon as they complete their search)

3. Explain the following to the individual to be surveyed.

   The Library is conducting a study of ERIC use to determine if additional training should be offered to patrons. Would you please fill out a short questionnaire to assist with the study. It should require no more than a few minutes of your time. If the individual responds "yes" give them a survey and ask them to please sit away from the terminal. If the individual says "no" thank them for their time and wish them a good day.

4. After the individual returns the survey, note the time their search was completed next to the search number on the log sheet and on the top of the survey form. EVEN IF A PATRON DECLINES TO FILL OUT A SURVEY, A BLANK SURVEY FORM SHOULD BE ATTACHED TO THE LOG.

5. Continue to collect surveys from all who perform searches during the period. If an individual begins, but does not complete their search during the period, then do not survey them.

6. Staple the surveys and the log sheet together and turn them in to John Christensen. If he is not in his office (2226 HBLL), leave them in his box in room 2228 HBLL or shove them under his door.

7. If a patron who is about to use the terminal observes that a study is being conducted and asks about it, explain the following.

   The library is conducting a survey of ERIC use to determine if additional training is needed. At the end of your search, we have a short questionnaire we would like you to fill out if you would be willing to participate in the study.

January 12, 1990

STUDENT ASSISTANT
INSTRUCTIONS FOR LOG AND QUESTIONNAIRE

ERIC

You will have three tasks; (1) to record the beginning and ending times of search sessions on a log, (2) to give a survey form to those who perform searches, and (3) to collect survey's after they are completed. Below are the procedures you should follow in completing these tasks.

1. Start up the equipment associated with the ERIC survey. (It is extremely important that the equipment be operational by the time the survey period begins)

2. On the Survey Log note the date, the time, and your name. On the survey forms for the session record the date and then number them consecutively.

3. During the survey period, log the beginning and ending times for each ERIC search session. For the purposes of this study, an ERIC search session is defined as all searching activity by one individual during one "sitting" at the ERIC station. The individual may enter multiple search terms during a single session. You will record only the beginning and ending times of the session.

4. Attempt to give a survey form to each person after he/she complete their search. If a person is already seated at the ERIC station when the survey period begins, give him/her a survey as soon as they complete their search. If an individual begins a search within the survey period but does not complete it by the end of the period, do not wait for the person to conclude their session. Mark "not surveyed" on the log.

5. When you attempt to give a survey to an individual explain the following.

   The Library is conducting a study of ERIC use on CD ROM to determine what additional training should be offered. I would appreciate it if you could fill out a short questionnaire to assist with the study. It should require no more than a two minutes of your time. Are you willing to participate in the study?

   If the individual responds "yes" give them a survey and ask them to please sit away from the ERIC station (Be sure the number of the survey you give the individual corresponds to the number on the log for the times recorded). Instruct them to return their completed survey to you.

   If the individual says "no", thank them for their time and wish them a good day. For individuals who respond "no" or who fail to return their surveys, mark "not surveyed" on the log.

6. If a patron who is about to use the ERIC station observes that a study is being conducted and asks about it, explain the following.

   The library is conducting a survey of ERIC use on CD ROM to determine what additional training is needed. Those who use ERIC are asked to complete a short questionnaire. Participation in the survey is not required. Please feel free to use ERIC even if you prefer not to fill out a questionnaire.

7. When a questionnaire is returned, check to see that it has been filled out completely. If the questionnaire has not been completely filled out, ask the individual if he/she could take the time to finish the questionnaire. If they respond "no" thank them for their time.

8. File all completed questionnaires by their survey number in the folder for that survey period.

9. At the end of the survey period turn the folder with the log and questionnaires into John Christensen, Room 2226, leave it in his box in Room 2228, or shove it under the door of Room 2226.

January 12, 1990

BYLINE/ERIC
SURVEY LOG

Terminal Number (BYLINE Only)	Date	Beginning Time	Your Name

Survey Number	Time Begun	Time Completed	Surveyed	Not Surveyed	Notes
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

ERIC

ONE TWO HOUR SESSION PER DAY

DAY	STARTING TIME
Feb 12	11 am
Feb 13	12 pm
Feb 14	1 pm
Feb 15	2 pm
Feb 16	3 pm
Feb 17	4 pm
Feb 20	5 pm
Feb 21	6 pm
Feb 22	7 pm
Feb 23	8 pm
Feb 24	8 am
Feb 26	9 am
Feb 27	10 am
Feb 28	11 am
Mar 1	12 pm
Mar 2	1 pm
Mar 3	2 pm
Mar 5	3 pm
Mar 6	4 pm
Mar 7	5 pm
Mar 8	6 pm
Mar 9	7 pm
Mar 10	8 pm
Mar 12	8 am
Mar 13	9 am
Mar 14	10 am
Mar 15	11 am
Mar 16	12 pm
Mar 17	1 pm
Mar 19	2 pm
Mar 20	3 pm
Mar 21	4 pm
Mar 22	5 pm
Mar 23	6 pm
Mar 24	7 pm

APPENDIX E-2

ERIC - STUDENT ERRORS

FREQUENTLY MADE ERRORS (OR INEFFICIENCIES)

Selection/Entering

47 1. Did not use thesaurus to identify appropriate terms.

45 2. Used terms too broad for effective free text searching. eg. health and programs

2 3. Used term other than mandatory level descriptor to designate population. eg. elementary-schools instead of elementary-education (the mandatory term)

3 4. Used much too broad a thesaurus descriptor. eg. "education" rather than elementary-education

21 5. Used hyphens inappropriately. eg. inserted hyphens into own made-up phrases

0 6. Used "The" in name of journal. eg. The-Journal-of-School-health rather than Journal-of-School-Health

7 7. Did not use the index "F5" to identify authors.

5 8. Used made-up phrases. eg. "reason for drinking"

1 9. Used singular term when plural term was appropriate. eg. elementary-school instead of elementary-schools

30 10. Failed to use hyphen with descriptor. eg. teacher influence rather than teacher-influence

0 11. Used inappropriate combination of descriptors. eg. women's-studies and William Shakespeare

2 12. Inefficient truncation or should have truncated.

Combining/Limiting/Broadening

5 13. Combined terms when one or both terms had come up zero.

22 14. Didn't know how to combine terms or failed to make appropriate combinations of posted terms.

0 15. Used "with" inappropriately. eg. "single with parents" when single parents would have been more effective.

__3__ 16. Misused Boolean operators.

__9__ 17. Did not try synonymous terms to broaden narrow results.

__7__ 18. Didn't narrow to a workable number of references.

__3__ 19. Narrowed too much. Required too many variables.

__0__ 20. Improper use (or lack of use) of parentheses in nesting groups of descriptors.

Displaying/Printing

__4__ 21. Did not use # before item number when attempting to display earlier item. eg. "6" instead of "#6"

__5__ 22. Didn't know how to show results.

Miscellaneous

__7__ 23. Misspelling. eg. "technics" rather than techniques

__13__ 24. Inappropriate data base.

APPENDIX E-3

ERIC - LEARNING OBJECTIVES

ERIC CD-ROM HANDS ON TRAINING

Learning Objectives

I. **To develop a hands-on program for training students how to plan, execute, and utilize effective ERIC SilverPlatter CD-Rom Searches.**

A. Students will be able to briefly explain what ERIC is and does.

B. Students will be able to show an understanding of search planning by:

1. Describing their information needs.

2. Using the ERIC Thesaurus or the SilverPlatter online Thesaurus and/or Index to identify appropriate descriptors and/or identifiers.

C. Students will effectively perform their searches by:

1. Using function keys efficiently.

2. Selecting appropriate terms from:

a. The online Thesaurus or Index.

b. Descriptor and identifier fields of displayed records.

3. Using Boolean logic to combine the descriptors and/or identifiers into effective search statements.

4. Limiting, as needed, by educational level, by major descriptor, by document type, and/or by year of publication.

5. Printing or downloading selected information.

APPENDIX E-4

ERIC - INSTRUCTION OUTLINE

ERIC CD-ROM HANDS ON TRAINING

Major Objective and Instruction Outline

I. **To develop a hands-on program for training students how to plan, execute, and utilize effective ERIC SilverPlatter CD-ROM searches.**

A. Students will explain what ERIC is and does.

Instructor will give a brief introduction to the ERIC system, incorporating the following information:

ERIC (Educational Resources Information Center) is a government agency, established in 1966, which sponsors the collection, publicizing, and dissemination of documents, studies, project reports, curriculum guides, etc. which are of value to educators but which would be, without ERIC, difficult to locate. The items are indexed in Resources in Education. From 1969, ERIC has also indexed journal articles in Current Index to Journals in Education. Both documents and journal articles are included in an ERIC CD-ROM search.

B. Planning and Beginning the Search

1. Students will show an understanding of search planning by:

a. Describing their information needs.

eg. I need information on behavior problems of gifted elementary school students.

b. Using the **Eric Thesaurus** or the SilverPlatter online Thesaurus and/or Index to identify descriptors and/or identifiers appropriate to their subjects.

eg. behavior problems, gifted, elementary education, etc.

C. Performing the Search

1. Students will select appropriate terms from:
   a. The SilverPlatter online Thesaurus.

      eg. behavior problems **and** gifted **and** elementary education

   b. Descriptor and identifier fields of displayed records.

      eg. After terms have been combined, the results should be displayed and scanned to identify additional pertinent terms.

   c. The Index (Free-text terms or identifiers).

      eg. Before using free-text "out of your head" terms, the Index should be checked to see how many times the term has been used. Identifiers, which frequently represent new ideas not yet assigned as descriptors, can also be found in the Index. Personal or organization names, geographic locations, program names, etc. are also entered as identifiers.

2. Students will use Boolean logic to combine the descriptors and/or identifiers into effective search statements.

   eg. behavior problems **and** gifted **and** elementary education

   eg. (behavior problems **or** discipline problems) **and** gifted **and** elementary education

   eg. behavior problems **and** gifted **not** disadvantaged youth

3. Students will demonstrate their understanding of the ERIC SilverPlatter CD-ROM system by:

a. Using the appropriate function keys.

Leave **Thesaurus** or **Index** to return to search = **F** for **F**ind

Erase = **Backspace key**

Display results of search = **F4** or **D** for **D**isplay (from **Menu**)

Select terms from display = Use **arrow keys** to take **cursor** to **descriptor** or **identifier**, then type **S** for **S**elect (from **Menu**)

Select terms from **Thesaurus** = **Esc**, **T** for **T**hesaurus (from **Menu**) **S** for **S**elect (from **Menu**)

View scope notes, broader and related terms = **Esc**, **T** for **T**hesaurus (from **Menu**), **T** for **T**erm Details (from next **Menu**). **Descriptors** can be selected from **T**erm Details screen by using **arrow keys** to take **cursor** to desired term and typing **S** for **S**elect (from **Menu**

Print results of search = **F6** or **P** for **P**rint (from **Menu**)

Print number symbol to work with sets = **Shift 3**

Browse through document = **Pg Dn** or **Pg Up**

Top of previous document = **Ctrl Pg Up**

Top of next document = **Ctrl Pg Down**

b. Using the **Esc** (escape) key to activate the **Commands** menu.

c. Selecting the online **Thesaurus**; typing desired subject; using **Term Details** to find scope note as well as broader, narrower, and related terms; selecting desired terms (**descriptors**) by moving cursor to **descriptors**

and typing **S** for **Select** (from the **Menu**); then typing **F** for **Find** (again from the **Menu**) to return to search screen for **descriptors** to be automatically typed into a combined list (connected by **or**) of related terms. #6. represents the "behavior problems" set of descriptors.

eg.
#1. 1479 behavior-problems in de
#2. 284 antisocial-behavior in de
#3. 469 emotional-problems in de
#4. 113 personality-problems in de
#5. 80 problem-children in de
#6. 2255 #1 or #2 or #3 or #4 or #5

d. Repeating the steps in item b. to select terms for a set of descriptors (#11) which represents the "gifted" portion of the search.

eg.
#7. 2534 gifted
#8. 665 academically-gifted in de
#9. 61 gifted-disabled in de
#10 54 gifted-disadvantaged in de
#11. 3172 #7 or #8 or #9 or #10

e. Using the **Index** to check for **identifiers** if the subject has not, as yet, been assigned **descriptor** status. Following the steps given in item b., etc.

f. Combining **sets** (or individual **descriptors/identifiers**) appropriately.

eg. #1 and #7 (behavior-problems in de **and** gifted- in de)

eg. #6 and #11 (behavior-problems in de **or** antisocial-behavior in de **or** emotional-problems in de **or** personality-problems in de **or** problem-children in de **and** academically-gifted in de **or** gifted-disabled in de **or** gifted-disadvantaged in de)

eg. (#1 **or** #2) **and** #8

eg. (#3 **or** #4) **not** (#9 **or** #10)

g. Showing records (**F4**) or **S** (**S**how) from **Menu** and marking desired records by pressing **M** for **M**ark Records (from the **Menu**).

h. Selecting additional **descriptors** or **identifiers** from the records, as appropriate.

i. Printing records **P** (**P**rint) from **Menu**.

j. Changing options for showing and printing **O** (**O**ptions) from **Menu**.

eg. SHOW fields: Citn,de,id,ab
Records: 1,3,14-19

PRINT Fields: Citn,de,id,ab
Records: MARKED
separate pages: No
searches: Yes

k. Limiting, as needed, by educational level, by major descriptor, by document type, and/or by year of publication.

egs. elementary-education, secondary-education, higher-education, etc.

behavior-problems in dem
gifted- in dem

dtn=143 Research/Technical Reports

dtn=070 Information Analyses (Literature reviews, State-of-the-Art Papers)

dtn=170 Translations

py=1993 py>1989 py<1985

l. Downloading documents by inserting a double sided/ low density disc 3 1/2", then pressing ESC and selecting **D** (for **D**ownload) from the **Menu**. **Options** can be changed by pressing **O** for **O**ptions (from the **Menu**), then pressing **ENTER** key to start downloading.

APPENDIX E-5

ERIC - SCRIPT FOR CLASSROOM PRESENTATION

ERIC ON SILVERPLATTER CD-ROM

Script for

Classroom Presentation*

Prepared by: Afton Miner
Education Librarian
Brigham Young University

Introduction:

ERIC is the acronym for Educational Resources Information Center--a center established by the U.S. Department of Education in 1966. One of the original purposes for the Center was the gathering of various government sponsored education projects, research, etc., which had been funded during the early sixties. These reports would then be made readily accessible to educators. ERIC was also charged with identifying and locating other elusive materials, whatever the sources, which would be of value to educators from the preschool level up through university administration. These so-called "fugitive" documents could include research done by university departments, associations or individual educators, etc. It could include teaching ideas and unit plans, conference papers, bibliographies, program reports, or etc.--in short, anything of value to educators, on any level, which, without ERIC would be difficult or impossible to locate.

Sixteen clearinghouses were established and staffed, each responsible for the identification and processing of documents from an assigned broad area of education. These documents were described in Resources in Education (RIE) (in earlier years known as Research in Education), ED (educational document) numbers were assigned and permission obtained to reproduce the items on microfiche, thereby ensuring easy access, at a reasonable cost, to educators everywhere.

ERIC Clearinghouse personnel encourage the submission of all documents of possible value but it should be understood that the clearinghouses exercise a measure of quality control, accepting about 50% of the items submitted.

(Briefly demonstrate how to use Resources in Education to locate material.)

In 1969, it was determined that the Clearinghouses could also handle the indexing of periodical articles so the publication Current Index to Journals in Education (CIJE) was begun. CIJE indexes over 750 education and education related journals. Together, Resources in Education and Current Index to Education make up the **ERIC** system. Each publication can be searched manually or both can be accessed at once on CD-ROM databases such as that produced by SilverPlatter. (Show how to use Current Index to Journals in Education manually.)

Planning an ERIC SilverPlatter CD-ROM Search:

When planning an ERIC CD-ROM search, it is useful to describe the results you hope to obtain. For example, a person wishing to find articles and documents concerning behavior problems of gifted children in elementary school might describe her search as follows:

> I am interested in any articles or studies which deal with behavior problems of gifted children in elementary schools. (Write the following on chalk board:)

Concept 1		**Concept 2**		**Concept 3**
behavior problems	**and**	gifted children	**and**	elementary schools

The efficient way to enter such a search is to begin by pressing the **ESC** key in the upper left-hand corner of your

keyboard. This will give you the **MENU**. Select **T** (for Thesaurus), then type in the term representing your first concept, in this case behavior problems. If the term is listed in the Thesaurus, type **S** (for **S**elect Term), then **F** (for **F**ind) to go back to your search screen. The term (behavior problems) will appear on the screen with a set number and with postings showing the number of times the term occurs as a subject term in the data bank.

The second term should be selected in the same way, ie. **ESC**, **T**, and by typing gifted children. The Thesaurus refers you from the term gifted children to gifted. Type **S** (for **S**elect Term) and **F** (for **F**ind) to return to search screen.

We now have **#1: 1479 BEHAVIOR-PROBLEMS IN DE**

#2: 2534 GIFTED- IN DE

"IN DE" indicates that each term is an assigned **descriptor** (or subject heading).

You can combine set one and set two by typing **#1 and #2**, or since set #2 is the last item entered, you can simply type **and #1**. As you see, the results from combining the two sets are **19** items. There are **19** articles or documents having both behavior problems and gifted as subject descriptors. We have one more concept to add to the search--elementary schools. So how would we go about selecting the term? **ESC** (to get the MENU), **T** for (Thesaurus), **S** for Select), and **F** for Find) to return to search screen.

Set **#4** (for elementary schools) is the last term entered so we can just type **and #3** (the combination of **#1** "behavior problems" **and #2** "gifted" to find how many articles or documents have been assigned the subject headings **behavior problems and gifted and elementary schools.**

We find that there are **no articles or documents** which have all three terms as descriptors. So we will either have to be

satisfied with the 19 items which have just **behavior problems** and **gifted** or we will need to broaden our search.

Let's look first at the 19 items by pressing **F4** (**for show**), as indicated at the bottom of the screen. We can browse through these items by using **page down** or ctrl **page down** (to go to the top of the next item) or **page up** or **ctrl page up** (to go to the top of the preceding item).

You will notice while browsing that each item description is pretty long when all of the fields are shown. I would recommend that you change the fields by pressing **O** (for **O**ptions) and typing over the **ALL** (for **All Fields**) the following: **CITN,DE,ID,AB** The citation (**CITN**) includes enough information to locate your article or document, the descriptor (**DE**) gives you the assigned subjects, the identifier (**ID**) gives proper names, geographical locations, associations and "probationary" descriptors (or subject), while the abstract (**AB**) will give you a summary of the content. If you are ever unable to find a desired term as a **descriptor** in the **Thesaurus**, do **ESC** to get the **Menu**, then choose **I** (for **I**ndex) to see if your term is listed as an **identifier**. If so, press **S** (for **S**elect) to select your term, then **F** (for **F**ind) to go back to Search Screen.

If you find an item which interests you, press **M** (for **M**ark Record). When you eventually press **P** (for **P**rint) all marked records will be printed.

As you browse through the records, if you see a descriptor or identifier of interest, you can select the term for later use by using the arrow keys to take the cursor to the desired term and pressing **S** (for **S**elect). When you finish browsing and press **F** (for **F**ind) to return to the search screen, the selected terms will be entered as new sets and ready to make new combinations as desired.

We found some useful items from the 19 items resulting from the combination of the terms "behavior problems" and "gifted" and marked them for printing, but now let's see if we can broaden the search and find other helpful information.

Let's clear the first search by pressing **ESC** to get the **MENU**, selecting **C** (for **C**lear) and typing **ALL** (to clear **all records**).

We will begin again by typing **ESC**, then **T** (for **T**hesaurus), then the term "behavior problems". This time instead of simply typing **S** (for **S**elect), we will type (**from the MENU**) **T** (for **T**erm Details). As you see, **Term Details** gives information about the term "behavior problems" and gives broader, narrower, and related terms. After thinking it over, we decide that if the related terms "antisocial behavior" or "emotional problems" or "personality problems" or "problem children" are used with the term "gifted" we could be interested in the resulting articles or documents. So we take the cursor to each of these terms and press **S** (for **S**elect). We then press **F** (for **F**ind) to return to the search screen. We find that the selected terms appear on the search screen with listed postings and that a "behavior problems set" has been made.

How could we make a similar set for the term "gifted"? **ESC** (to get **MENU**), then **T** (for **T**hesaurus), and type "gifted". This time we will **S** (for **S**elect) the term "gifted", then select all the narrower terms by taking the cursor to the terms and typing **S** (for **S**elect), then **F** (for **F**ind) to go back to the search screen.

To make a set for "elementary schools" we repeat the process. **ESC** (to get **M**enu), **T** (for **T**hesaurus), and type "elementary schools". We next select (**S**) "elementary schools" and the related terms "elementary education" and "elementary school students", then type **F** (for **F**ind) to go back to the search screen where we find an "elementary schools" set. Notice that

the term "elementary education" has several thousand more postings than the term "elementary schools". That is because "elementary education" is a **mandatory grade level descriptor.** If a document or article has anything to do with the elementary level, the indexers are required to assign the term "elementary education" as a descriptor. They can use other terms such as "elementary schools" or "elementary school students" if they choose. So it is better to use the mandatory term to get everything pertinent. The Mandatory Level Descriptors are listed on the last page of your green hand-out or on page xv of the printed Thesaurus of ERIC Descriptors.

When we combine Set #6 (the behavior problem set) and Set #11 (the gifted set) we find 59 items which have as subject descriptors at least one of the descriptors in Set #6 and at least one of the descriptors in Set #7. When we add the "elementary schools" set (Set #15), we find that there are seven articles or documents with at least one of the descriptors in the "behaviors problems set" and at least one of the descriptors in the "gifted set" and at least one of the descriptors in the "elementary schools set". We can look through these items and mark any which we wish to print.

We've talked about broadening a search by selecting related terms from the **Terms Details** feature of the **Thesaurus** or from the item records as your are browsing. Not let's talk about narrowing a search if you have an unwieldy number of items.

Let's select Set #6 and Set #11, to find how many items have at least one of the descriptors from the "behavior problems set" and at least one of the descriptors from the "gifted set". There are 53 items. We will press **F4** to display some of these items. Notice that in each item record there are two sets of descriptors. The second set includes asterisks before each descriptor. The asterisks indicates that the **descriptors are**

major ones. In the article or document, there is a **major treatment** of the subject covered by each descriptor marked with an asterisk. It is a **major descriptor.** One of the best ways to limit articles is by selecting only major treatments of your subject.

You will notice that **"in de"** appears after the descriptors you selected from the online Thesaurus. To limit to major descriptors, you simply type **"in dem"** (for **in descriptor major**). You could limit all descriptors in Set **#6** to major descriptors by typing **#6 in dem.** You could do the same thing with **#11 in dem.** This time when you combine the two sets you will get 25 items instead of 53--all major treatments of all selected subjects.

Another way to narrow your results is to limit to **document type.** Again, please look at the last page of your **ERIC** handout. There is a list of document or publication types. For example **DTN** (**document type number**) 143 represents reports of research. To limit your results to such items, you should simply type your set number, ie. **#12 and dtn=70.**

To limit by year, type your set number and limit it by **PY** (**for publication year**) ie. **#12 and py>1989** would limit your search to those items published from 1990-.

APPENDIX E-6

ERIC - STUDENT HANDOUT

ERIC

1. What is **ERIC**?

   ERIC is the acronym for **Educational Resources Information Center**, a center which was established by the U.S. government in 1966 for the purpose of bringing together so-called "fugitive" educational documents, i.e. items not published by regular publishers, hence frequently difficult to locate.

2. How does **ERIC** operate?

   A number of clearinghouses have been established to collect and disseminate educational materials. Clearinghouse personnel are responsible for locating and identifying all types of "fugitive" educational materials; for securing permission to copy the items on microfiche; and for making the documents widely available to all educators, at a reasonable cost. The documents are assigned **ED** (educational document) numbers and are described in the monthly publication, Resources in Education (**RIE**).

3. How has the system changed through the years?

   In 1969, with the introduction of Current Index to Journals in Education (**CIJE**), clearinghouse workers began indexing articles from over 750 education and education-related periodicals. The articles are assigned **EJ** (educational journal) numbers and are described in **CIJE**.

   For many years it was necessary for researchers to consult **RIE** to locate ERIC documents and **CIJE** to identify periodical articles, but now it is possible to check for both documents and articles at the same time with a computer search on **ERIC CD-ROM**.

4. What makes **ERIC** unusual?

   ERIC CD-ROM indexes single documents such as conference papers, project descriptions, research reports, teaching ideas, curriculum guides, creative works, statistical data, tests, etc. as well as periodical articles. Most indexes include only the articles.

5. Who should use **ERIC**?

   Anyone interested in educational topics or the teaching of any subject should use **ERIC**. The system collects materials of value to all educators--from the preschool teacher to the university professor or administrator.

ORGANIZING YOUR SEARCH

State your topic in one or two sentences. Circle or underline the terms (keywords) essential in describing your topic.

I need information on behavior problems of gifted children in elementary schools

Organize your search as follows:

a. List each concept from your topic in a separate column.
b. List synonymous or related terms within the appropriate column.

Concept 1	Concept 2	Concept 3
(List synonymous or related key terms for Concept 1.)	(List synonymous or related key terms for Concept 2.)	(List synonymous or related key terms for Concept 3.)
Behavior Problems	*Gifted*	*Elementary Schools*
or	or	or
Antisocial Behavior	*Academically Gifted*	*Elementary Education*
or	or	or
Emotional Problems	*Gifted Disabled*	*Elementary School*
or	or	*Students*
Personality Problems	*Gifted Disadvantaged*	
or		
Problem Children ← AND →	← AND →	

↑ OR ↓

Consult a thesaurus (such as the *Library of Congress List of Subject Headings*, or *Thesaurus of ERIC Descriptors*) to assist in the process of determining narrower, broader, or related terms that may be useful in your search.

As you conduct your search:

- Use the OR operator to combine synonymous or related terms (those listed within one column).
- Use the AND operator to combine different concepts (terms listed in separate columns).

97 BEST COPY AVAILABLE

```
SilverPlatter 3.1          ERIC 1982 - September 1992        F10=Commands F1=Help
: No.      Records  Request
:
: #1:         1986  BEHAVIOR-PROBLEMS in DE
: #2:          378  ANTISOCIAL-BEHAVIOR in DE
: #3:          594  EMOTIONAL-PROBLEMS in DE
: #4:          147  PERSONALITY-PROBLEMS in DE
: #5:          106  PROBLEM-CHILDREN in DE
: #6:         2989  #1 or #2 or #3 or #4 or #5
FIND:

Type search then Enter (DY). To see records use Show (F4). To Print use (F6).
```

CONCEPT ONE

```
SilverPlatter 3.1          ERIC 1982 - September 1992        F10=Commands F1=Help
: No.      Records  Request
:
  #1:         1986  BEHAVIOR-PROBLEMS in DE
  #2:          378  ANTISOCIAL-BEHAVIOR in DE
  #3:          594  EMOTIONAL-PROBLEMS in DE
  #4:          147  PERSONALITY-PROBLEMS in DE
  #5:          106  PROBLEM-CHILDREN in DE
  #6:         2989  #1 or #2 or #3 or #4 or #5
  #7:         3207  GIFTED- in DE
  #8:          924  ACADEMICALLY-GIFTED in DE
  #9:           82  GIFTED-DISABLED in DE
  #10:          76  GIFTED-DISADVANTAGED in DE
  #11:        4094  #7 or #8 or #9 or #10
  #12:         450  ELEMENTARY-SCHOOLS in DE
  #13:       22064  ELEMENTARY-EDUCATION in DE
  #14:        4267  ELEMENTARY-SCHOOL-STUDENTS in DE
  #15:       24084  #12 or #13 or #14
: #16:           8  #6 and #11 and #15
FIND:

Type search then Enter (DY). To see records use Show (F4). To Print use (F6).
```

CONCEPT ONE

CONCEPT TWO

CONCEPT THREE

SilverPlatter 3.11 — ERIC 1982 - September 1992

No.	Records	Request
1:	1986	BEHAVIOR-PROBLEMS in DE
2:	378	ANTISOCIAL-BEHAVIOR in DE
3:	594	EMOTIONAL-PROBLEMS in DE
4:	147	PERSONALITY-PROBLEMS in DE
5:	106	PROBLEM-CHILDREN in DE
6:	2989	#1 or #2 or #3 or #4 or #5
7:	3207	GIFTED- in DE
8:	924	ACADEMICALLY-GIFTED in DE
9:	82	GIFTED-DISABLED in DE
10:	76	GIFTED-DISADVANTAGED in DE
11:	4094	#7 or #8 or #9 or #10
12:	450	ELEMENTARY-SCHOOLS in DE
13:	22064	ELEMENTARY-EDUCATION in DE
14:	4267	ELEMENTARY-SCHOOL-STUDENTS in DE
15:	24084	#12 or #13 or #14
16:	8	#6 and #11 and #15
17:	46	#6 and #11
18:	22	#17 in DEM
19:	26939	DTN=70
20:	5	#18 and DTN=70
21:	)58339	PY)1989
22:	11	#17 and PY)1989

ERIC 1982 - September 1992 usage is subject to the terms and conditions of the Subscription and License Agreement and the applicable Copyright and intellectual property protection as dictated by the appropriate laws of your country and/or by International Convention.

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AN: EJ438279
AU: Yewchuk,-Carolyn; Jobagy,-Shelly
TI: The Neglected Minority: The Emotional Needs of Gifted Children.
PY: 1991
JN: Education-Canada; v31 n4 p8-13 Win 1991
AV: UMI
DE: Children-; Elementary-Secondary-Education; Peer-Relationship; Stress-Variables; Teacher-Expectations-of-Students
DE: *Emotional-Problems; *Gifted-; *Psychological-Needs; *Special-Education; *Student-Attitudes
ID: Parent-Expectations
AB: Outlines the particular stresses experienced by gifted children arising from the unrealistic expectations of parents and teachers, social handicaps, poor peer relationships, and boring and unrewarding school work. Explains five main "gripes" collected from interviews with gifted and talented children. Lists recommendations for teachers. (SV)

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Using ERIC on SilverPlatter CD-ROM

Function Keys

1. To begin search:

   a. Press (**ESC**) to display operating **MENU**.

   b. Select **T** (for **THESAURUS**), then type subject word or phrase. If desired word or phrase is an assigned **DESCRIPTOR**, it will be listed in the online **THESAURUS**.

   c. At this point, **T** (for **TERM DETAILS**) can be selected from the displayed menu and narrower, broader and related terms will be shown.

   d. If any of these terms appear useful for the search, they can be selected by using the arrow keys to take the cursor to the term/s, then pressing **S** (for **SELECT TERM**).

   e. Press **F** (for **FIND**) to go to the search screen where selected term/s and postings will be displayed.

      Other terms can be selected in the same way, ie. (**ESC**), **T** (for **THESAURUS**), typing in desired term, **T** (for **TERM DETAILS**), **S** (for **SELECT TERM**) and **F** (for **FIND**) to return to the search screen.

   f. The selected descriptors can then be combined by using the connectors **and**, **or**, or **not**.

      The **and** would indicate that all connected concepts must be present in the search results. An **or** would mean that any of a number of synonomous terms would do. When the connector **not** is present, the descriptor representing the first concept would be required but the descriptor representing the second concept would not be included.

   g. After descriptors have been entered and results shown, item numbers, rather than descriptors, can be used to make further combinations, ie. **#1 and #3** rather than **behavior problems and gifted.**

2. To **erase:** Use **BACKSPACE** key.

3. To **show** results of search: Press (**F4**) or, if **MENU** is displayed, **S** for **SHOW**.

4. To **browse** document: Use **Pg Dn** and **Pg Up** keys. If you wish to change options to display a briefer record, choose **O** for **OPTIONS**, then type **citn,ab,de,id**, over the **ALL**. The **citn (citation)** gives you enough information to locate the item. The **ab (abstract)** tells what the article or document is about. The **de (descriptor)** is an assigned subject heading. The **id (identifier)** is a proper name or a new term not yet assigned as a descriptor.

5. To return to the **top of the previous document**: Press **(Ctrl Pg Up)**

6. To go to the **top of the next document**: Press **(Ctrl Pg Dn)**.

7. **To select terms from display**, move cursor with **Up-Down Arrows** to desired terms, then highlight by pressing **S** (for **SELECT TERM**).

   Press **F** (for **FIND**) **to return to search** and add selected terms to search strategy.

8. To **mark items for printing**: Press **M** (for **MARK RECORD**).

9. To consult **INDEX** (for proper names or for terms which do not appear in the **THESAURUS** as descriptors): Press **(ESC)**, then **I** (for Index).

10. Type desired term and press **ENTER**.

11. Use **Up-Down Arrow** keys or **Pg Up**, **Pg Dn** keys to browse **INDEX**.

12. Use **S** (for Select) to highlight desired terms, then **F** (for Find) to return to the search screen. Terms selected from the **INDEX**, along with their postings, will be added to the search strategy.

13. To **PRINT** results of search: Press **P**. The default format **(citn,ab)** can be used if the citation and the abstract provide sufficient information.

14. If the assigned subject headings would be helpful for future reference, **C** (for Change Options) can be pressed and the **descriptor (de)** and **identifier (id)** fields can be added to the printed records. **citn,ab,de,id**

15. To identify other printing options and additional information about the system press **F3** for **Guide**.

CHANGING PRINT OPTIONS

```
SilverPlatter 3.11          ERIC 1982 - September 1992          F10=Commands F1=Help
No.     Records  Request

#11
                          Print Options
#12:   Fields to Print:                  CITN,AB
#13:   Records to Print:                 ALL
#14:   Field Labels:                     (Short) Long  None
#15:   Print Searches:                   (Yes) No
#16:   Clear Marked Set:                 Yes (No)
#17:   Sort By Field:                    (No) Ascending  Descending
#18:   Field to Sort:                    AU
#19:   Include Holdings Message:         Yes (No)
#20:   Print Held Titles Only:           Yes (No)
#21:   Print Limit:                      NONE
#22
#23:        8   #21 and PY>1989
#24:    26939   DTN=70
#25:        6   #16 and DTN=70

MENU:  Start Print   Change Options

Press ENTER to start printing records retrieved by your last search
```

```
SilverPlatter 3.11          ERIC 1982 - September 1992          F10=Commands F1=Help
No.     Records  Request

#11
                          Print Options
#12:   Fields to Print:                  CITN,AB,DT,DE,ID
#13:   Records to Print:                 1
#14:   Field Labels:                     (Short) Long  None
#15:   Print Searches:                   (Yes) No
#16:   Clear Marked Set:                 Yes (No)
#17:   Sort By Field:                    (No) Ascending  Descending
#18:   Field to Sort:                    AU
#19:   Include Holdings Message:         Yes (No)
#20:   Print Held Titles Only:           Yes (No)
#21:   Print Limit:                      NONE
#22
#23:  Press Tab to select options to change
#24:  Press Enter to accept options
#25:  Type record numbers to be printed
```

CITN (Citation--enough to locate the article or document)
AB (Abstract)
DT (Document Type)
DE (Descriptor--or subject heading)
ID (Identifier--proper names or probationary descriptors)

Select F3 for other LIMIT FIELDS.

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SAMPLE *RIE* ENTRY

ED 313 182 SO 020 269

Cramer, Elizabeth, Ed. Hill, Margaret, Ed.

Who Said Learning about the Constitution Isn't Fun! Active Lessons on the U.S. Constitution for Junior and Senior High School Students. Lessons created by participants at "Congress and the Constitution: A Summer Institute for Teachers" (Ontario, California, 1988).

Chaffey Joint Union High School District, Ontario, CA.; Commission on the Bicentennial of the United States Constitution, Washington, DC.

Pub Date—88

Note—134p.

Pub Type—Guides - Classroom - Teacher (052)

EDRS Price - MF01/PC06 Plus Postage.

Descriptors—"Citizenship Education, Government (Administrative Body), "History Instruction, Lesson Plans, Secondary Education, Teacher Developed Materials, "United States Government (Course), Units of Study

Identifiers—California, "United States Constitution

Twenty-eight lesson plans developed by California teachers who attended a summer institute on Congress and the Constitution are presented in this document. Sample lesson plan titles are: (1) "Geopolitics and the Constitution," (2) "Judicial Review," (3) "Electoral College and the . . . .

DESCRIPTORS

SAMPLE *CIJE* ENTRY

EJ 393 433 CS 738 259

High School Foreign Language Programs: A Renewed Challenge. Pfister, Gwenter O. *Clearing House*; v62 n7 p309-13 Mar 1989 (Reprint: UMI)

Descriptors: Secondary Education; "Second Language Instruction; "Cultural Awareness; Cultural Education; Critical Thinking; Worksheets; Cross Cultural Studies; Reading Instruction; German

Identifiers: Cultural Literacy

Note: Special Theme Issue: Cultural Literacy.

Deals with the special importance of cultural literacy in language acquisition. Introduces and illustrates the use of a cultural inventory designed to help students read in a foreign language. Illustrates a pre-reading exercise designed to tap cultural context. (NH)

MANDATORY "EDUCATIONAL LEVEL" DESCRIPTORS
(Procedure Implemented February 1975)

- EARLY CHILDHOOD EDUCATION
  Scope Note: Activities and/or experiences that are intended to effect developmental changes in children, from birth through the primary units of elementary school (grades K-3)
  - PRESCHOOL EDUCATION
    Scope Note: Activities and/or experiences that are intended to effect developmental changes in children, from birth to entrance in kindergarten (or grade 1 when kindergarten is not attended).
  - PRIMARY EDUCATION
    Scope Note: Education provided in kindergarten through grade 3.
- ELEMENTARY SECONDARY EDUCATION
  Scope Note: Formal education provided in kindergarten or grade 1 through grade 12
  - ELEMENTARY EDUCATION
    Scope Note: Education provided in kindergarten or grade 1 through grade 6, 7, or 8.
    - ADULT BASIC EDUCATION
      Scope Note: Education provided for adults at the elementary level (through grade 8), usually with emphasis on communicative, computational, and social skills.
    - PRIMARY EDUCATION
      Scope Note: (See above.)
    - INTERMEDIATE GRADES
      Scope Note: Includes the middle and/or upper elementary grades, but usually 4, 5, and 6.
  - SECONDARY EDUCATION
    Scope Note: Education provided in grade 7, 8, or 9 through grade 12
    - JUNIOR HIGH SCHOOLS
      Scope Note: Providing formal education in grades 7, 8, and 9—less commonly 7 and 8, or 8 and 9
    - HIGH SCHOOLS (Changed from "Senior High Schools" in March 1980.)
      Scope Note: Providing formal education in grades 9 or 10 through 12
    - HIGH SCHOOL EQUIVALENCY PROGRAMS
      Scope Note: Adult educational activities concerned with the preparation for and the taking of tests which lead to a high school equivalency certificate, e.g., General Educational Development program
- POSTSECONDARY EDUCATION
  Scope Note: All education beyond the secondary level—includes learning activities and experiences beyond the compulsory school attendance age, with the exception of adult basic education and high school equivalency programs. (Before Apr75, restricted to "education beyond grade 12 and less than the baccalaureate level.")
  - HIGHER EDUCATION
    Scope Note: All education beyond the secondary level leading to a formal degree
  - TWO YEAR COLLEGES (Changed from "Junior Colleges" in March 1980.)
    Scope Note: Public or private postsecondary institutions providing at least 2, but less than 4, [illegible]

dtn=

CODE	PUBLICATION/DOCUMENT TYPES
010	BOOKS
	COLLECTED WORKS
020	—General
021	—Conference Proceedings
022	—Serials
030	CREATIVE WORKS (Literature, Drama, Fine Arts)
	DISSERTATIONS/THESES
040	—Undetermined
041	—Doctoral Dissertations
042	—Masters Theses
043	—Practicum Papers
	GUIDES
050	—General (use more specific code, if possible)
	—Classroom Use
051	—Instructional Materials (For Learner)
052	—Teaching Guides (For Teacher)
055	—Non-Classroom Use (*For Administrative and Support Staff, and for Teachers, Parents, Clergy, Researchers, Counselors, etc. in Non-Classroom Situations*)
060	HISTORICAL MATERIALS
070	INFORMATION ANALYSES (State-of-the-Art Papers, Research Summaries, Reviews of the Literature on a Topic)
071	—ERIC Information Analysis Products (IAP's)
072	—Book/Product Reviews
073	—ERIC Digests (Selected) in Full Text
080	JOURNAL ARTICLES
090	LEGAL/LEGISLATIVE/REGULATORY MATERIALS
100	AUDIOVISUAL/NON-PRINT MATERIALS
101	—Computer Programs
102	— Machine-Readable Data Files (MRDF)
110	STATISTICAL DATA (Numerical, Quantitative, etc.)
120	VIEWPOINTS (Opinion Papers, Position Papers, Essays, etc.)
	REFERENCE MATERIALS
130	—General (use more specific code, if possible)
131	—Bibliographies/Annotated Bibliographies
132	—Directories/Catalogs
133	—Geographic Materials/Maps
134	—Vocabularies/Classifications/Dictionaries
	REPORTS
140	—General (use more specific code, if possible)
141	—Descriptive (i.e. Project Descriptions)
142	—Evaluative/Feasibility
143	—Research/Technical
150	SPEECHES, CONFERENCE PAPERS
160	TESTS, EVALUATION INSTRUMENTS
170	TRANSLATIONS
171	—Multilingual/Bilingual Materials

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APPENDIX E-7

ERIC - POSTTEST ASSIGNMENT

ERIC ON SILVERPLATTER CD-ROM

Suggested Search Topics

1. intergroup relations of ethnic or minority groups

1. relationship between self esteem and academic achievement

2. characteristics of students who achieve academically

3. gender differences in mathematics achievement

4. effectiveness of games or problem solving as training methods

5. children's or adolescent literature and nonfiction

6. instructional effectiveness of cooperative learning or how it relates to academic achievement

ERIC ON SILVERPLATTER CD-ROM

Assignment

1. Please select one of the above topics and identify appropriate terms by using the on-line thesaurus or index.

2. Combine the terms appropriately to find how many articles or documents have been assigned the requested combinations of descriptors or identifiers.

2. Broaden the search by selecting related terms from the online Thesaurus or Index.

3. Narrow the search by limiting to major descriptors, date, or document type.

4. Print the search strategy and the first item, showing the citation, the descriptors, the identifiers and the abstract.

5. Please write your name on the upper right corner of the printed search strategy and hand it to the instructor or proctor.

APPENDIX E-8

ERIC - ANALYSIS OF STUDENT PERFORMANCE

ERIC STUDY RATINGS OF STUDENT LEARNING

STUDENT CHARACTERISTICS

NAME_____
HANDS ON_____ DEMONSTRATION_____
TERMINAL # _____
YEAR IN SCHOOL _____
USED ERIC BEFORE - YES_____ NO_____

CRITERIA:

1. Completely understood and implemented concept
2. Partially understood and implemented concept
3. Did not understand nor implement concept

RATINGS:

Appropriately used Thesaurus Descriptors	1	2	3
Created and combined sets of concepts (boolean searching)	1	2	3
Showed and marked records	1	2	3
Printed records including changing print options	1	2	3

ERIC STUDY RATINGS OF STUDENT LEARNING

EXPERIMENTAL (HANDS ON) GROUP

STUDENT CHARACTERISTICS

NAME_____
HANDS ON_____ DEMONSTRATION_____
TERMINAL # _____
YEAR IN SCHOOL _____
USED ERIC BEFORE - YES_____ NO_____

CRITERIA:

1. Completely understood and implemented concept
2. Partially understood and implemented concept
3. Did not understand nor implement concept

RATINGS:

Appropriately used Thesaurus Descriptors	1	16 (59%)
	2	6 (22%)
	3	5 (19%)
Created and combined sets of concepts (boolean searching	1	16 (59%)
	2	5 (19%)
	3	6 (22%)
Showed and marked records	1	22 (81%)
	2	4 (15%)
	3	1 (3%)
Printed records including changing print options	1	24 (89%)
	2	2 (7%)
	3	1 (3%)

OVERALL RATING ON TOTAL PRODUCT
(not just mechanics)

1	13 (48%)
2	9 (33%)
3	5 (19%)